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ABSTRACT

Designed to provide information on educational computing to elementary and secondary school educators, particularly those in South Australia, this publication is produced once each term. The Term 1 issue includes the following articles: a description of Information Technology Month (July 1984) activities in South Australia; "Software Piracy vs. Copying Programs" (John Roche); "From Whom to Purchase a Computer" (Wayne Starick); "Application Development Language" (Dean Rosenhain); "Computers in the Classroom" (Keith Lomax, Bellevue Primary; David Chapman, Campbelltown High; Peter M. Russell, Memorial Oval Primary); "Teaching with Small Databases" (Roger Taplin); "The Curriculum and Information" and "Classify" (two computer programs, Frank James); "Fifth South Coast Summer School in Computing" (Sandra Hajszan and Hugh Wood); "Chess Mate!" (Alan Goldsmith); and "Reviewing Software--A Practical Approach!" (Carol Cayley). Reviews are also provided of the following software programs: Mathvader, Elementary Mathematics Volume 1, Elementary Volume 7, MECC Volume 10 Elementary, Easy Spell, Easy Script, Terrible Tales, Rally A, Sheepdog, Granny's Garden, Data Handler, Grade Manager, MECC Science Volume 1, and LOGO on the Commodore 64 and Atari. Five books and the Facit Dot Matrix Printer are also reviewed. (LMM)

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

EDITORIAL

A major function of the Angle Park Computing Centre is to disseminate information about schools computing to interested parties throughout South Australia. Not surprisingly, this is one of the most difficult aspects of the Centre's work as it involves establishing contact with classroom teachers, ancillary staff and administrators in all schools in the State. The publications of the Angle Park Computing Centre constitute a major mechanism for school contact.

This particular publication, "The Computer in the General Curriculum", has a long history in secondary schools, and a similar publication for primary schools was started in 1983. During 1983, it became apparent that separate publications were not appropriate as teachers wanted information about the R-12 scene. Consequently, 1984 sees a major change in strategy for the Angle Park Computing Centre publications; there is now a monthly newsletter which contains news and information of relevance to South Australian schools, and this publication which is produced each term, containing articles of a more general nature and of wider appeal. Both publications are sent to all South Australian schools and this particular publication has a wider distribution beyond schools and beyond the state.

The Focus of "The Computer in the General Curriculum" will be to disseminate major articles about schools from the Staff of the Angle Park Computing Centre, and more importantly, contributed articles from schools. An important need of schools at this point in time is to hear about other computing activities. Contributions will be most gratefully received and published at the earliest possible time. Forward YOUR contributions to the Editor at the Angle Park Computing Centre.

David Shires

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The "Computer in the General Curriculum" is used to convey information about the educational use of computers to schools and to stimulate and promote the professional development of teachers. It is produced each term and all correspondence, including articles, subscriptions and cancellations should be addressed to the Editor at the address on the front cover.

The information presented in this publication represents the views of several people, but does not necessarily represent the views of the Angle Park Computing Centre nor of the South Australian Education Department.

Editor: David Shires

Acting Head, Angle Park Computing Centre

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I *INFORMATION TECHNOLOGY MONTH*

A Feast of Activity - July 1984

The role of information technology in education will be a major focus of the activities of INFORMATION TECHNOLOGY MONTH in South Australia this year.

Due to the success of INFORMATION TECHNOLOGY WEEK in past years, the decision was made to extend it to a month in 1984 to allow increased access to displays and seminars.

Running from July 1 to July 28 in South Australia, a strong programme is planned by the ITM Committee.

INFORMATION TECHNOLOGY MONTH is sponsored by the Federal Department of Science and Technology, the State Ministry of Technology, the Australian Computer Society and Telecom. The main objective behind running the month is to promote greater awareness in the community of the potential and the impact of information technology.

In line with this objective, activities exploring educational issues will include two seminars to interest both parents and educators. The Australian Computer Society will host these seminars - on Careers and Computing, and Microcomputers and Your Child. The latter will provide an opportunity for debate on the role of computers in the classroom.

Other events include separate day and evening sessions on Word Processing for School Leavers conducted by the Office Automation Association.

A number of "Tours of Technology" will be available to interested groups. These will highlight organisations using information technology, and include The Advertiser Newspaper, the Cadsman Bureau and the Corporate Affairs Commission.

The Libraries Association will demonstrate the use of on-line data bases for research at the State Library in North Terrace and the Noarlunga Library in the Noarlunga Centre. Topics can be nominated for a free search of the giant American data base, DIALOG and the Australian equivalent, AUSINET.

A major contribution to ITM is being made by educational institutions themselves. Many TAFE Colleges across the metropolitan and country areas will be open for public activities and seminars.

The Angle Park Computing Centre is involved in the production of a resource book for teachers and students, containing information, games and puzzles. One copy will be sent to all schools. Angle Park Computing Centre, and a number of schools will also have open nights for the public.

Among the new and exciting additions to the ITM programme is the INFORMATION TECHNOLOGY HOUSE which is being set up at West Lakes. A house, supplied by Jennings Industries, will be modified and equipped to demonstrate the application of

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information technology in leisure, home management and home crafts. Computer controlled information devices saving labour and energy will be installed in the house to show that information technology has a role to play in the homes of today.

A comprehensive brochure detailing all ITM 1984 activities will be distributed to schools in early June. Further information on involvement in ITM is available from Mr John Roche at the Angle Park Computing Centre.

II Software Piracy vs Copying Programs

When you purchase a program, it is a good practice to keep a 'back-up' copy in a safe place. If you are not provided with a back-up, then it is generally possible to make your own. You may need several copies if you have several stand-alone machines. Unfortunately, you do need to get permission from the publisher of the software to make multiple copies and this is not always forthcoming. Hence you may be forced into buying several copies. Angle Park Computing Centre gives you the freedom to make multiple copies of any of our software that you have purchased, provided that those copies remain the property of the school, and that they remain on the school premises.

If you have any doubts, check directly with the publisher or the distributor of the software.

Software piracy, on the other hand, must be discouraged by everyone, in the interest of education, if not alone for ethical reasons. Good software costs a great deal in time and money to produce. Education authorities and the Government certainly could not and should not carry all the cost of this work. Every time a "free" copy of a program is passed on, it:

1. Endangers the current situation where publishers pay for research and development of software in exchange for a fair return on their investment

2. Greatly reduces the freedom to make legitimate back-ups

3. Contributes to higher costs due to greater efforts to prevent illegal copying

4. Reduces the standing of schools as places where ethical conduct is imparted to students and the community at large.

- John Roche
APCC

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III From Whom Do I Purchase a Computer?¿?

What criteria should be applied when deciding which retailer the school should purchase from? Not an easy question for city schools, and perhaps even harder for country schools.

However there are a number of criteria which should be used to determine the suitability of a potential supplier, and supporter for your school equipment. The use of the word 'supporter' is most important because implementing a computer system, and sustaining its use requires the provision of ongoing support from the dealer who provided the equipment.

The main points to consider are:

*The existence of in-house service facilities.
*The range of software carried.
*The soundness of advice given by the dealer.
*The price offered by the dealer.

Service

If computers and their peripheral devices functioned perfectly for ever, the problem would be non-existent. Electronic devices are inherently reliable, but mechanical components (keyboards, disk drives and printers) can, and on occasions do, malfunction. Thus one criterion that should be applied is the provision of in-house technical advice and service facilities.

A situation arose recently where a school could have ended up paying a repair bill not much less than the purchase price of the device being repaired. This happened because the school, in an attempt to support local trade, purchased their system from a nearby retailer who had no service facilities. When the equipment malfunctioned the retailer passed it on to another dealer who did have some service facilities, but was not fully equipped to deal with the device in question. This lead to a delay of months, a potentially high repair bill, and dissatisfaction all round, yet all along the line the people concerned had acted in what they believed to be the best and fairest way - not an easy situation to rectify when the peripheral is already in pieces on the work bench of a second party who has spent a lot of time on it.

The question of service is not straightforward and if any doubt exists schools would do well to contact the A.P.C.C. before doing anything.

Software

Once schools have purchased their hardware, they need to consider the question of software. Therefore another criterion that can be applied is the amount of educational software on that dealer's shelf (not listed in any catalogue, but actually on the shelf!). Naturally no dealer can, nor should be expected to, stock every piece of software available. However, a glance at the display will give some idea of the ratio of educational software to 'other'.
The question of what software to purchase should be considered when the initial hardware purchase is under discussion because it is intimately linked to the goals set by the school for that hardware. The A.P.C.C. is able to offer advice on the suitability of various software packages, and maintains both review software and written reviews of software.

Dealer Advice

City schools have an ever increasing number of dealers to choose from - a problem in itself. Country schools have a slightly different problem - to support local traders, or buy from a city dealer.
The situation is complicated by the fact that some dealers, although they may be knowledgeable in the field of computing, have little expertise in the field of Educational Computing.
If the situation was simply that of buying a computer and a clearly defined set of peripheral devices the problem would not exist, but unfortunately it isn't that simple! For any given computer there are a range of monitors and printers that can be interfaced to that computer, with advantages and disadvantages associated with each of those choices.

Therefore another criterion that could be applied is the soundness of advice given by the dealer. However, to judge that one would need to possess enough knowledge for this not to be a problem in the first place.

Schools contemplating purchase should contact the A.P.C.C. as earl, as possible to discuss the hardware configuration most appropriate to their situation.

Price

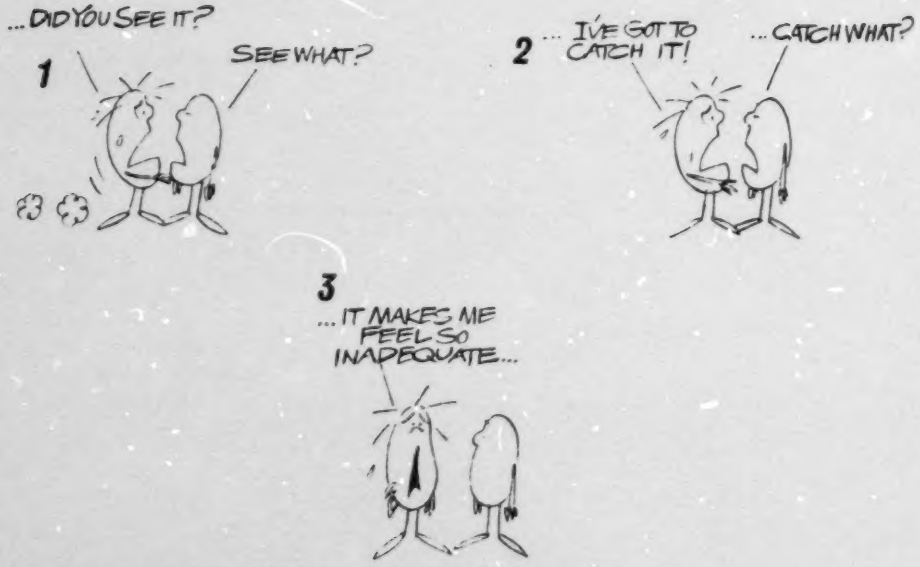
The last factor to be considered is the price offered by the dealer. In the market place of today, competitive and agressive discounting would appear to be the norm. However this can work against schools purchasing microcomputers. To provide effective after sales support a dealer needs a reasonable profit margin (they need to eat too!) which means that a dealer selling at rock bottom prices may not be able to provide that support. Then when a school goes to another

dealer for advice and/or service they could find a somewhat lukewarm reception. Thus a very cheap price can be the cause of frustration and lead to dissatisfaction on the part of teachers who want to use that system.

Purchasing the right equipment, at the right price, from the right person has never been an easy task in any field, but the new terminology and new capabilities of microcomputers make it especially difficult for the first-time purchaser. Again it must be stressed that contacting the A.P.C.C. whenever there is any doubt is the best way to prevent mistakes being made, which could prove to be at the least unfortunate, or at most unnecessarily expensive.

- Wayne Starick
APCC

IT'S CATCHING...



IV *Application Development Language*

Angle Park Computing Centre's **Application Development Language** or "ADL" is a new programming language soon to be released for the BBC microcomputer. It is a compiled language that will execute equivalent programs much faster than BBC BASIC. It has a syntax and structure similar to procedural languages such as Pascal.

ADL produces programs that are independent of routines in the BBC BASIC ROM, therefore making it possible for users to write programs that could be saved on EPROMs.

ADL has been designed to use memory more efficiently than BASIC, both in terms of program storage and variable/data representation. Comments and variable names do not consume memory at execution time, thus encouraging long variable names and copious comments to make programs more readable. Arrays, strings and other medium level data structures are available. ADL lacks many Pascal constructs such as **sets, records** and user-defined data types. Direct access to memory locations and a complete machine-code call facility are implemented.

ADL was initially intended as an **Application Development Language**, for use at Angle Park Computing Centre. It is being used to write text editors, utility programs simulations and CAI materials. Its usefulness outside of this area will depend upon the needs of the user and the skills of the programmer. Because the compilation process takes extra effort and time, development time using ADL is sometimes longer than writing an equivalent program in BBC BASIC. In many cases, BASIC is the preferred language for writing educational software.

Some teachers may find that ADL is suitable as a "comparison language" to show to senior school computer studies students. ADL is a good language for writing games and simulations where speed is important but the programmer does not wish to write in machine code. Some students may wish to use ADL to get results not possible with BASIC.

Angle Park Computing Centre does not recommend ADL as a general purpose student's programming language. The language requires several steps to get a program up and running. The complexities this introduces may deter some students if ADL is introduced as a first programming language.

The manual supplied with the system is not a programming tutorial. Readers are expected to be familiar with BBC BASIC and Pascal. Like all languages, there will be some learning necessary before the user feels comfortable. The manual is divided into sections that overlap considerably. The frequent examples sometimes make use of a structure, data type or syntax not yet explained. In most cases the best way to understand a particular statement is to try it out in a simple test program.

A word of caution for network managers: ADL has not been designed with the Econet in mind. During the compilation of ADL programs, bytes are sent to the output file one at a time. This can cause serious time delays in many network situations making it unsuitable for use as a teaching language on a large network. As a result of this, large ADL programs should only be compiled in the DFS environment. Of course once programs have been compiled, they will run well on the network. Access to data files from ADL is directly through Operating System calls.

The Education Department of South Australia and Angle Park Computing Centre reserves all rights to the ADL compiler. The runtime routines needed for execution of a compiled program are considered to be "Public Domain" software and may therefore be sold or given away as part of a software package developed using ADL.

We have released these routines to the "Public Domain" to encourage programmers to develop and distribute programs written in ADL. As the runtime package is not copyright, programmers need not worry about royalties to APCC or breaking the law by distributing a commercial product.

ADL should be available for sale through the APCC and commercial outlets sometime during second term, 1984.

- Dean Rosenhain

APCC

V Computers in the Classroom

The Bellevue Experience

Parents in the Bellevue Heights area must get tired sometimes of answering questionnaires or sending back 'tear-off' slips from the newsletter but the process is important for the school's understanding of parents' wishes, needs and aspirations. By such means we maintain a good harmony between the school's efforts and the parents' expectations. By such means, we discovered late in 1982 that people were concerned about the advance of the computer age. They thought that children should be getting experience in 'keyboard skills', and they were prepared to bear some additional expense in order to bring this about.

Our first thought was to buy in a set of typewriters - enough to accommodate an entire class, but the folly of this was soon apparent to all - especially when we discovered that low performance computers were available for the same money, and that they could offer so much more than typewriters. We could have afforded a couple of Apples or BBC's but school council was adamant that all children gain some immediate benefit from the proposed facility. It was clear too, that if teachers were to gain anything significant it would be necessary to have enough keyboards to occupy half a class at a time. Out of the agony came the decision to buy two Vic 20 networks - sixteen keyboards in all - with colour monitor TV's. (The colour was an extra expense but council knew the importance of colour to small children and decided the extra expense was necessary.)

While the decision making was going on, we embarked on a staff-readiness programme. Inspired by the knowledge and skill of the deputy, three of us enrolled for the eight-week, after hours course at Angle Park. With our new found skills and a borrowed computer we were then able to demonstrate at staff meetings, the potential of the computer as a teaching and learning aid. This coincided with council's decision to buy, and a successful request was then made of the Regional Director for ten TRT days to give the staff half day workshops on using the keyboards. Representatives from several other schools also attended these workshops which proved to be most successful in making teachers feel comfortable with the new technology.

A sub-committee had been set up by council to research and recommend, and having advised to purchase, this committee was then given the task of formulating a policy on computers in the curriculum. Our 'Computeracy' policy has now had its final draft ratified by council and staff. It states our philosophy on computers and it lists our priorities for their use. It

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also describes the means by which we realise our philosophy and it lists the physical and personnel resources used to do that.

In twelve months we have come a long way. All staff use the computer room regularly. There are no gaps on the timetable - indeed some staff complain that they neither get enough time nor had an early opportunity to reserve a spot on the timetable. We have taught three classes of year 7 children to type - this term we began with year 5's after an experiment with them last year showed that it would work. Ninety of our children have now gone to high schools or private schools with computer skills at their command. All 400 of our children from R to 7 can load and run programs. An eight-hour familiarisation course was given to parents last year, and this year two parent computer clubs have been established - we give them some tuition on Monday and Wednesday evenings and they get sole use of a keyboard for two hours at a time.

Dissatisfied with the commercial products, we have written our own programs in tables drill work, spelling drill, higher level 'thinking' activities (mostly associated with words), discrimination tasks and creative design. We have also computerised the typing course that has been used successfully in the cases mentioned above. We have found the computer to be particularly useful in remedial work and this year have started remediation programmes for two large groups of children. The desperate need is for time - time to prepare more suitable programs for more classroom applications.

Our experience with suppliers has been 'iffy'. Their contact person is ever willing to help but if a disk drive goes on the blink it must be sent to Sydney for attention and this can take weeks. It is also less than satisfactory to have educationally uninformed people making representations to us. They do not know our needs nor are their standards of acceptable software good enough. On the other hand the equipment has been quite reliable when one considers the hammering it has taken here. For several hours a day, every day, keyboards and disk drives have been (and are) in almost continuous use and the breakdowns have been rare.

Soon after we purchased our networks the price of the more advanced Commodore 64 was severely reduced, but it was still almost double the cost of our Vic 20's and we could not have afforded sixteen of them. The Vic 20 price has reached a rock bottom we are told and today is not much less than what we

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paid. There are other low capacity machines about - some less than $200 but one would need to be very careful. A standard keyboard is essential, for example, and so is proven reliability.

For the future we can see some interesting probabilities. Already our teachers are wanting more computers - one or two in each classroom for individual work. As children acquire typing skills they will use the word processor to better effect than at present and we look forward to some good outputs in this area. It is not difficult to imagine individual teachers buying their own computers for school use either. Already, for $300 a teacher could have a stand-alone machine in a corner of the classroom - in black and white, but with the school's library of programs at her command. For compatibility's sake we will stay with the Vic 20 for some time yet, and especially if we acquire additional classroom machines, but eventually some higher powered models will have to be used as children's skills grow into them and as their use for administrative purposes becomes standardised.

It was not easy to install our networks, find suitable furniture at no cost, accept full responsibility for security and stand by one's decisions in the face of criticism based on hindsight, but we have done it. It has had a unifying effect on staff, children and parents and the educational consequences have been outstanding.

When we have an official opening of our complex in a few weeks, it will be with the knowledge that we did it our way, we did it right, and we did it together.

Keith Lomax
Bellevue Primary

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Outside of Computer Studies at Campbelltown High School

Campbelltown High School installed its BBC Network late in 1982 with funding committed by School Council and Staff. That committment was conditional on the Network being used for more than just Computer Studies: such a wider usage was also an inherent part of the philosophy that motivated a group of teachers at the school to establish a computing facility.

The usages planned and/or executed fall naturally into three categories: Students; Teachers and Parents.

STUDENTS

1. Recreation

The computers are available for student use at recess, lunchtimes and two or three nights after school to 4.30p.m. or 5.00p.m. Individual students or pairs of students book a machine the same day: games playing is restricted to 3 only machines and costs 50¢ a session. There are no paddles or joysticks. Recreational (or more serious) computing is free: many students buy their own discs but all regulars are given space on a special File Server Disc.

In 1984 this service has become much more structured: one lunchtime is conducted as an Advanced Programmers Club, while two others are used for short courses for Year 8 students. As in 1983, block bookings are made from time to time for girls only with help and supervision given by Jenny Cannon, a Computer Studies teacher.

Lunchtimes generally see from 15 to 20 students using the room, including students from all years: as these are very often the more diffident, supervision is regarded as a Yard Duty.

2. Learning

As more and better commercial software has become available, students are, or will be, making use of the system in their lessons. For example early in 1983, the Music Department used the Acornsoft Music package for several lessons with Year 8 and Year 9 music classes. Geography, Maths, Science, Biology, Chemistry, Physics, Home Economics and our Learning Unit have all purchased packages; we expect others to follow suit.

At the end of 1983, the Computer Studies Staff put on a Word Processing and Keyboard short course for all Year 9 students. This was based on the Computercat Touch typist and APCC Words packages, with almost the whole time spent working on a station. The aim was to prepare students for using the system for word processing in English lessons. It is likely that 1984 will see the demand for time on the network exceeding supply: two networks look to be less a luxury and more a necessity!

Towards the end of each year, our feeder Primary Schools bring our Year 7 intake to see the school. We try to give each of these groups a 50 minute lesson on the network. This means they come the following year expecting to start off on the network. This has its difficulties.

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Financing of this cross faculty use has been a problem: individual faculties buy the software, a back up disc and a proportion of the File Server discs supporting each faculty group. Maintenance of the system was originally funded by Computer Studies with a built in budget component for cross faculty development. With funding severely restricted in 1984, each user of the system will now pay a lesson charge to cover maintenance. The separation of Computer Studies funding and that for wider uses is difficult to realise in practice: a 'user pays' principle is fine for maintenance but not for initial purchase.

TEACHERS

1. Staff Development

In 1983, three Introduction to Computing courses were run for staff, with ad hoc lessons for individuals in between. The aim of this introduction was to familiarise staff with the system from a student's viewpoint: teach some elementary ideas on hardware and programming and instil confidence in handling the equipment. The latter is probably the greatest stumbling block in producing a computer literate staff (together with misinformed prejudice and depressing apathy). The introductory courses were run at lunchtime or after school and were also attended by staff from local primary schools. We believe that involvment of teachers, from other schools, in the use of our system may be a useful way to promote interschool contact and generate new ideas and enthusiasms.

It was clear from the moderate attendance of our staff at the introductory courses, that only favourably disposed teachers will attend voluntarily. In some instances times were a problem, in others the lack of direct relevance to their own teaching proved a disincentive to attend. Three steps are being taken to reach the whole staff, in some way:

(a) Through the good offices of Jim Reed at Northgate Computers, we mounted two software displays in 1983, to which our staff and those from other schools were invited. Rescheduling lessons for an afternoon allowed many teachers to work through all the available software (at that time!) on the network. Such a role is one which could well be adopted by Regional Offices, perhaps through using two or three schools with networks in different regional areas. Difficulties in transferring some of the newer packages to the network, because of protection of the programs, could well be more efficiently solved at a Regional or State level, than in Schools.

(b) From time to time we mount a staffroom display of Software Reviews and borrow armfuls of programs from whoever will lend them (bearing in mind we buy from where we borrow) to demonstrate to prospective faculty buyers. This has proved effective in enabling Faculty Heads to make unhurried decisions about purchase. Unfortunately a large number of staff are still unable to look at what is available. When funding is available, we also supply copies of Software reviews or adverts to Faculty Heads as they are published.

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(c) Proposals have been made to require all teachers who intend to take classes into the Computer room, to have completed a short course on "Using Computers in Your Lesson". As well as familiarisation with using the system, this course will cover classroom management in the computer room, preparation for using the computers in a lesson and follow up work. The experience gained in assisting staff use the network in 1983 has shown this type of course to be of more immediate value than just computer awareness.

In an attempt to reach every teacher, funding is being sought, through the School Development Programme channel, from the Schools Commission. This will provide T.R.T.'s for complete faculties to take the course in an afternoon and evening of intensive work. In this way each course can be tailored to faculty needs and some sort of priority given to those wishing to use the network straight away.

Staff Development outside of Computer Studies is an urgent requirement, but one needing resources and expertise not likely to be available in each school. Again, a Regional role in this area would enable efficient resource usage whilst preserving the intimacy, accessibility and needs orientation of a localised approach.

2. Visits

During 1983 and this year we have had many visits from other schools, usually those about to establish a system. We have often learnt as much as those visiting us and it is instructive to compare approaches and share ideas. Whilst APCC serves a necessary purpose in the sifting and dissemination of ideas at a statewide level, the visits we have received suggest that contact between small groups of schools could spark off new developments, consolidate current practices and help us all stop reinventing the wheel. The Minerva/Midas link could help a lot in establishing this close contact. Perhaps the Department &/or Government could come to our aid with some funding for time to do these things and instal the equipment.

We have also been blessed with visits from heavyweights: Department mandarins, Regional Deputies and so on. All schools with networks should invite these luminaries to visit and listen to an exposition of philosophy and practice: the author (System Manager/Head Computer Studies) will have had the incentive to crystallise these ideas and put them into print.

3. Administration

Some staff are now using VUCALC to produce a markbook file: this has the advantages of doing all the sums at the end of term and providing a convenient print out. We have one Computer Studies teacher, Kevin Davey, who assures us of a tailor made Markbook program in the near future.

Neville Wheaton produces our timetable using the QBE facility at APCC: we hope to use a remote terminal facility, should it become available, to update files and do small jobs without the trip to the Centre.

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Our Library is interested in using a standalone, or possibly the network, for library administration. At present we are looking at overdues but eventually a bar code control system seems the obvious development (money allowing). WURLI suggests itself as a useful adjunct to the Bibliographies and Card Index. We shall be working on developing a WURLI based catalogue for some subject areas during 1984.

PARENTS

Last year, as a gesture of thanks for committing their money to the computers, we ran two evening courses on Introduction to Computing for parents. These cost $5 for materials only, although most also made a donation. They were oversubscribed and those attending proved able and willing students.

It is intended to repeat these courses for our surrounding community but without the philanthropic fee. The courses will be offerred at market rates to enable us to build up funds for further network developments such as a hard disc system. It would, however, be nice to be able to offer such awareness courses to our parents, in particular, at nominal charge. Once more, funding from elsewhere would be required.

CONCLUSION

While Computer Studies continues to take the lion's share of network use (75%), this is dropping as other users require time. Ideally we would like to see 100% use spread over as many areas, that would benefit, as is possible. However, as always, we need more time and money than is available. We would appreciate hearing of ideas or strategies to overcome or avoid these problems.

David Chapman
Campbelltown High

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Memorial Oval Primary School

COMPUTERS IN THE CLASSROOM

In December 1982 the M.O.P.S. Council took the decision to purchase a computer. This took place after some considerable debate. Consideration was given to the suitability of the machine being offered to the school versus cheaper micros as well as the then published Departmental guidelines. A special meeting of Council was convened and interested parents also invited which allowed demonstration of two Apples, a Vic 20 and a Microbee. The decision to purchase the Apple was taken on the grounds of value for money and that it was the only micro stand alone then being supported by the Angle Park Computing Centre.

The commencement of the 1983 school year found, due to transfers, no staff member with any expertise in computing. It fell to the Deputy Principal with the assistance of the Regional Maths Adviser to develop a suitable programme.

Initially the micro was set up in the staff room and left there throughout term 1. The initial idea was to help teachers become familiar with and to feel comfortable to use the micro in their classroom. A "COMPUTERS & CHIPS EVENING" was held which commenced after school and continued to after 9.30 p.m. (the chips were fish and chips!)

Three Apple micros were available for the evening; the school's, one from Angle Park C. C. and one belonging to the Ed. Tech Adviser. Teachers were led through a 'hands on' experience programme by our regional Maths Adviser ably assisted by the Ed. Tech Adviser. The impact of this evening became at once evident by the sudden surge in the use of the micro in the staffroom during recess, lunch and non-contact times. This level of staff development continued through to the end of term 1 by which time it was felt we were ready for the next step.

At the beginning of term 2 a timetable was drawn up and the computer rostered to each class in turn for a whole week. The software used was to be selected by the classroom teacher from those available that included Maths and Language games. The data base 'Convicts and Computers' was programmed for use by one of the Year 7 classes to fit in with their study of First European Settlement.

Class teachers were responsible for organizing the computer's use. In practice it was found that a class list marked off after each child's turn ensured fair access for all children as well as maximising use through the day. Except where a teacher decided otherwise, no matter what the lesson, a child or group of two would be working on the computer. When finished they would lightly tap the next child on the shoulder to indicate it was their turn.

This policy has proven both effective and time efficient in further developing teacher awareness and maximising student use. The children are highly enthusiastic about the computer and the software

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packages have enabled all children to work at levels that meet their needs and challenge them to improve their performance.

Towards the end of term 3 an Elective Group was set up for interested Year 7 students to engage in simple Programming in BASIC. The school's micro was used for a one hour session each week. The small group of six varied. In selecting the group particular attention was paid to ensure girls were included.

Accessibility to keyboards was enhanced by using a BBC Micro owned by the Deputy Principal. With the latter, individual children were able to print out as well as save their programs. Thus it was possible for them to debug and edit work while waiting for their next turn. For this reason the BBC was used on a more or less continual basis in the Year 7 classes. Again student's were highly motivated and the educational validty of the exercise was realised in the problem solving situations that resulted. The children were encouraged to solve these themselves using the available manuals and reference materials. They used tables of contents, the index, and solved problems related to programming in small group situations.

With relation to the Apple, the text "Kids and the Apple" by Carlson has proved to be of exceptional value in that it can be used by children with little or no assistance from the teacher.

The BBC has also been used as a word processor by a few children. It took only about ten minutes to instruct children to use this function in its simplest form. (see the report on the Computers and Language Arts Workshop run by Dr. Claire Woods at the Whyalla Ed. Centre in 1983)

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COMPUTERS AT MEMORIAL OVAL PRIMARY SCHOOL.....1984 and BEYOND.....?

The same policy for using the Apple Micro will continue at M.O.P.S. in 1984. Once again it will be rostered out on a weekly basis except that due to fewer classes the Year 6 & 7s will have two weeks each per term.

The available software is slowly being added to as suitable programmes are located. The MECC Catalogue has been obtained.

At the beginning of term 1 a staff development and refresher session was held. Individual assistance for the teacher and a teaching session for the children is provided at the beginning of the week when the class is rostered on the computer.

At present the BBC is also available to the school but is usually reserved for Year 6 & 7s only. It is to be used for elective groups, programming, problem solving, some C.A.I. (Computer Aided Instruction) and some further experiments in word processing.

The school does not at present intend to purchase any additional micros. There is some interest in obtaining a printer for the Apple but this is presently listed as a low priority budget item.

Peter M Russell
Memorial Oval Primary

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VI TEACHING with SMALL Data-Bases

Using small data-bases to promote complex forms of learning is an application of computers in education that has received scant attention until relatively recently. This neglect is reflected by the small number of reports that have been published so far on this aspect of educational computing. Those that are available range from the wildly enthusiastic to the cautious, a not uncommon thing to find when a new teaching method appears on the educational scene and attracts its share of devotees and critics. Anthony Adams and Esmore Jones' account' of an enterprising teacher's work with a junior primary class in the English West Midlands is a good example of the former attitude towards this new teaching tool. Their description and commentary are worth a careful reading, both for what they convey of the character of enthusiasts' expectations, and for hints of what less optimistic observers might see as possible dangers and limitations.

"A group of children ... was working on the returns from the 1851 census, which are now available as a computerized data-bank. They, too, were using a Commodore PET, though this time with disc drive so that they could access the census returns very speedily, and the data-processing facilities that it provided enabled them to call up, for example, all the nail-makers in a particular road at the time of the census, or to discover the occupations in a particular area of all males between the ages of 25 and 41, or any other particular combinations of information of this kind. They also had available to them a range of historical resource materials, ranging from history textbooks suited to their reading level to a map of their area showing land uses at the time the census was taking place. Their teacher's comment was that this was a way of making history vividly alive for eight-year-olds: now it became a story about real people who had lived a hundred years ago in streets they walked along every day. They could discover in considerable detail who had lived in a particular house, how crowded it had been, what the ages of the inhabitants were, what jobs they did. Of course, all this information could have been discovered from the pages of the census returns themselves, seen in facsimile photostat, but only at the expense of many hours of labour and the effort of reading miniscule and difficult handwriting. Having the information stored on disc with a program that made it possible to combine and compare various facets of the information made the task much more possible for junior school children. It took the drudgery out of this kind of historical investigation. (Though, it should be added, the facsimile photostats of the actual census returns were there in the classroom as well: the children were never allowed to forget the actual source from which the data-base had been compiled.)
One thing that they decided they wanted to know about was the school population in their own home area of Brierley Hill at the time. As soon as they began to explore this, interesting and surprising facts came to light. There seemed, for example, a surprising number of 14 year-olds described as 'scholars', that is still in school attendance, in 1851. It wasn't until they came to check these figures from the census returns as shown on their viewing screen against other documents they had amongst their resources, such as school attendance registers and mining payrolls, that the real truth began to emerge. Recent legislation, in the form of the Mines Act, had made it illegal to send fourteen year-olds down the pits. Many, reported to the enumerators as 'scholars', appeared in no school lists but did appear in the payrolls. A little thought enabled the pupils to derive a possible (and likely)

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answer to the paradox. Clearly the head of the household had been lying in his returns to the enumerator to avoid getting himself into trouble and risking his son or daughter losing a job!"

Taken at face value this teaching project is impressive. Enabling students to develop and/or explore a computer data-base seems likely to offer many benefits, some of them possibly unique.

1) At its best, working with data-bases makes possible a ready movement between worm's eye and bird's eye perspectives. Students can explore both the particular and the general, and in ways that are mutually supporting and complementary. The computer can aid the achievement of a sense of the overall trends while helping students to retain ties with the detail of specific instances. Furthermore, and this is what would seem to be its unique contribution, the level and form of these shifts in attention can be under the direct control of students. It is they who can decide how information is to be organized and shaped to fit in with their questions and purposes. Handled properly, then, this teaching method should encourage students to induce concepts and to forge hypotheses to explain their observations, and just as importantly, to decide upon ways of putting hypotheses to the test.

2) The ability to range freely at differing levels of observation is made possible by the computer's capacity to shield students from tasks that are, in the context of the exercise, irrelevant. Tasks such as searching through data, sorting it, counting numbers in various groups and the like, can be an impedance to learning, partly because they are very time-consuming, but also because they distract attention from the concepts that give a learning activity its purpose.

3) Adams and Jones rightly emphasize the special contribution work with computer data-bases can make to the forging of intellectual skills and attitudes towards evidence. Vague initial questions have to be broken down into manageable elements or reworked to make them sufficiently precise, conflicting evidence has to be weighed and accommodated, and plans for extracting information relevant to an idea worked out. These and other similar forms of "learning how to learn" are likely to be best achieved through group rather than purely individual effort. The computer activity then becomes subservient to the interchange of ideas amongst the class or group. It is a crucial but not central learning tool.

4) Finally, this form of teaching exposes students to the information technology of their present and future worlds, but in a form that avoids it being passed over as mysterious or magical. Working with simple data-bases can establish a foundation of understanding and familiarity that will be important for how they will later come to view information sources and practices in the years to come.

So much for the ideal. But what are the potential hazards? Some of these are already evident in poorly conceived teaching with some of the present educational data-bases. Several potential problems are examined in the following discussion. Each points once again to the familiar principle that the value of a tool resides not entirely in the tool itself but also in how the tool is used.

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1) Adams and Jones claim that "the children were never allowed to forget the actual primary source from which the data-base had been compiled." This is likely to be easier said than done. There is the danger that means can become ends, and the use of the data-base can degenerate to the level of playing arbitrary games with symbols that have scant and shallow meanings for students. In the past, this kind of problem soon became evident in students' boredom or more active forms of disinterest. Such is the fascination of playing with computers at the moment, however, that students willingly engage in pointless drills and exercises merely because they involve work with a (temporarily) glamorous machine. Adams and Jones make the significant comment that computers can create a "'space' in which young minds can be taught to think and explore ideas for themselves." Problems will arise if the space is not filled sensibly.

   Should this degeneration occur, the outcomes need not be entirely bad. Some useful skills and insights may still emerge. Students can benefit merely from the need to shape a query in terms acceptable to the rigid syntax of current data-base programs. But whether this remains so when they are confronted with a seemingly never-to-end succession of workcards is another matter.

   So, data-base activities ideally should be firmly imbedded in a wider framework of learning experiences and teaching methods. The computer should be but one teaching resource amongst several.

   There may turn out to be some advantage in having limited access to computing facilities over the next few years for this reason. Opportunities for prolonged individual use are likely to be very limited so that provision for group activities and a wide range of preparatory and supporting learning tasks will be a necessity.

   A related question to be resolved is the desirability of including some experience with gathering raw data in teaching programmes which use data-base activities. This may not always be feasible, but where it is, it should encourage a lively sense of the pitfalls, errors and biases that attend human observation and the arbitrary character of some of the categories we devise for ordering our experience. It should also forestall the tendency to forget the deeper meanings that are represented by cryptic symbols and category counts.

2) There is a place for a careful investigation of "query languages" (or, at the least, query strategies) suitable for educational data-base programs. One of the unfortunate aspects of past and present work with computers is that users have to engage in a lot of learning that has more to do with the peculiarities of a particular computer or program than with the essential features of what they are about. A brief survey of the few currently available educational data-base programs shows marked differences in the query rules that have to be mastered and the query strategies that have to be adopted. The query "language" of an educational data-base for use in schools should be as unobtrusive and simple as is consistent with adequate power.

3) Lastly, there is the old problem of readiness for differing levels of investigating and thinking about a problem. If data-bases can promote flexible but directed exploration of data, and the derivation and weighing of competing interpretations, when are students ready for such activities? Might this have been an unrecognized

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issue with Adams and Jones' eight year-olds?

Some further issues that might be considered when preparing data-base teaching materials:

1) How large should (or need) a teaching data-base be? At present this is more a practical than theoretical issue, as the time for computer operations using the currently popular machines increases markedly once a critical amount of data is reached. For small amounts of data the relationship between size and time is often, but by no means always, approximately linear.

2) How much time or space has to be allowed for mastering the skills of computer use? (For example, for mastering the query syntax.)

3) What help or encouragement might be given to teachers to allow a data-base to be extended or adapted to meet with local interests or needs?

4) What kinds of statistical and graphical extensions should be assumed or required?

5) What keyboard and reading skills are desirable?

6) To what extent should data be coded? Some current packages make extensive use of coding because it allows more data to be packed into the available space, as well as more speedy access to it. The cost, however, is the imposition of tedious tasks of interpretation upon teachers and students as well as additional irrelevant learning.

-oOo-

[1] Adams A & Jones E Teaching Humanities in the Microelectronics Age
The Open University Press Milton Keynes 1983
pp. 2,3

- Roger Taplin
S.A.C.A.E.

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VII The Curriculum and Information

It seems that the most promising fields of curriculum support for computing in schools will involve computer assisted management of data in various subject areas. I think I remember Dr Northcote saying something similar at the Summer School. From the 1982 National Media Education Conference, one reads in the address 'The New Technologies - some considerations for Educators':

> "In essence the new technology is based on the ability to store and retrieve large amounts of information at great speed".
>
> Prof. Henry Breitrose,
> Department of Communication
> Stanford University
> CALIFORNIA USA

It might help student of computing to construct some elementary programs to manage data.

This is facilitated greatly by structured BASIC on a BBC microcomputer. I used a double subscripted string:

File-Array$(Record,Field)

Almost self-explanatory, isn't it? Elegant looking PROCedures can readily be constructed in structured BASIC to do all sorts of useful things with data: input, output, add, delete, amend, search, save, load and so on. Especially useful are Acorn-BASIC commands like INSTR, and OPENOUT.

One can base PROCedures on variations of this!!!

```
DEFPROCdisplay
    FOR Record=1 TO R
    CLS
    FOR Field=1 TO F
    PRINT File-Array$(Record,Field)
    NEXT Field
    PROCpause
    NEXT Record
ENDPROC
```

Soon it becomes obvious that one really wants procedures to PRINT and INPUT individual records and from there on...

It's so easy using the BBC's editor a line at a time to work the necessary variations on theme that one has to restrain one's enthusiasm before the whole thing gets too big!

For those of us who must make the best of something less elegant than the BBC's Acorn-BASIC, there are still many possibilities.

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Something like this has distinct possibilities, where the BASIC supports double subscripted strings < likeS$(x,y)>

```
FOR RECORD=1 TO R
CLS
FOR FIELD=1 TO R
INPUT FILE$(RECORD FIELD)
NEXT RECORD
GOSUB PAUSE
NEXT FIELD
```

Even with no subscripted strings, my Atari 'home' computer can store information in strings using concatenations

```
FOR RECORD=1 TO R
FOR FIELD=1 TO F
INPUT FIELD$
RECORD$(LEN(RECORD$)+1)=FIELD$
RECORD$(LEN(RECORD$)+1)=" "
L(RECORD,FIELD)=LEN(RECORD$)
NEXT FIELD
NEXT RECORD
```

And later display the information using something like:

```
A=1
FOR RECORD=1 TO R
FOR FIELD=1 TO F
PRINT FILE$(A,P(RECORD,FIELD))
NEXT FIELD
A=P(RECORD, FIELD)
NEXT RECORD
```

Inevitably, one has either problems with variable names (Commodores don't like RECORD - use RECRD) or DIMensioning strings. These difficulties shouldn't be allowed to obscure what's important here - files, records and fields - data and managing it.

Here's a program that works nicely on my Commodore 64 to design, input, display, insert and print records in a file.

It's NOT a flexibly usable database - it's to help somebody to learn about computers and data management.

Even in this form, it's usable - it will facilitate keeping printed card type records of stocks of hardware and materials in laboratories and libraries.

It's more than a stopgap or poor substitute - it allows sharing of enthusiasms and provides a gentle introduction to more powerful but daunting commercial programs.

For this particular program (in CBM BASIC), one needs access to a C-64 or Vic-20 or similar, and to be able to key in, run and debug an elementary program. It's meant to be easy to translate to any microsoft-like BASIC.

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```
9 REM       ********************
10 REM      DATA      MANAGER
11 REM      ********************
20 REM
22 REM
25 REM  BY FRANK JAMES, 1984
26 REM  FOR COMMODORE 64 MICRO-
27 REM
30 REM
50 PRINT "□":REM CLEAR THE SCREEN
60 PRINT:PRINT:PRINT:PRINT TAB(8)"DATA MANAGER"
99 REM  ******************************
100 REM  SECTION TO DESIGN THE FILE
101 REM ******************************
110 REM
120 PRINT:PRINT"PLEASE TYPE IN THE NAME OF THIS ";:INPUT"FILE! ";FILE$
121 PRINT
122 PRINT"-----------------------------------------"
125 PRINT"FOR FILE: ";FILE$
127 PRINT"-----------------------------------------"
130 PRINT:PRINT "PLEASE TYPE IN THE NUMBER "
135 PRINT
140 INPUT"OF RECORDS  IN THIS FILE ";R
145 IF R>9 THEN R=9
150 INPUT"OF FIELDS IN EACH RECORD ";F
155 IF F>9 THEN F=9
157 PRINT:PRINT "   FILE ";FILE$;" HAS "
159 PRINT:PRINT R;" RECORDS, EACH OF ";F;" FIELDS (Y/N)"
160 GET F$:IF F$="" THEN 160
161 IF F$="N" THEN 20
162 PRINT"-----------------------------------------"
165 PRINT"NOW PLEASE TYPE IN FIELD HEADINGS"
170 FOR  FIELD=1 TO F
175 PRINT:PRINT"HEADING FOR FIELD  ";FIELD;
180 INPUT HEADING$(FIELD)
185 HEADING$(FIELD)=HEADING$(FIELD)+":  "
190 NEXT FIELD
198 REM ********************************
200 REM SECTION TO INPUT THE WHOLE FILE
202 REM ********************************
220 FOR RECRD=1 TO R
225 PRINT "□"

228 PRINT "-----------------------------------------"
230 PRINT"FILE: ";FILE$
232 PRINT "-----------------------------------------"
250 GOSUB 400:REM INPUT A RECORD
290 NEXT RECRD
299 REM ********************************
300 REM SECTION TO DISPLAY EACH RECORD
301 REM ********************************
310 C=1
320 IF C<1 THEN C=R
322 IF C>R THEN C=1
350 GOSUB 500:REM DISPLAY A RECORD
355 PRINT:PRINT:PRINT:PRINT
365 PRINT"PRESS <R-REVIEW> <I-INSERT> <P-PRINT>";
370 GET P$:IF P$="" THEN 370
380 IF P$="R" THEN C=C-1:GOTO 320
381 IF P$="I" THEN R=R+1:GOSUB 400:GOTO 320
382 IF P$="P" THEN OPEN 3,4:CMD 3:GOSUB 500:PRINT#3:CLOSE 3
385 C=C+1:GOTO 320
395 REM
```


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```
399 REM ********************************
400 REM SUB-ROUTINE TO INPUT A RECORD
401 REM ********************************
425 PRINT "□"
429 PRINT "-----------------------------------------------"
430 PRINT"FILE: ";FILE$
432 PRINT "-----------------------------------------------"
435 PRINT:PRINT"RECORD ";RECORD;" OF ";R
437 PRINT
440 FOR  FIELD=1 TO F
445 PRINT:PRINT HEADING$(FIELD);
450 INPUT FILE$(RECORD,FIELD)
460 NEXT FIELD
461 PRINT:PRINT:PRINT:PRINT:PRINT
462 PRINT "-----------------------------------------------"
490 RETURN
499 REM ********************************
500 REM SUB-ROUTINE DISPLAY ONE  RECORD
501 REM ********************************
510 PRINT"□":REM CLEARS THE SCREEN
528 PRINT "-----------------------------------------------"
530 PRINT"FILE: ";FILE$
532 PRINT "-----------------------------------------------"
535 PRINT:PRINT"RECORD ";C;" OF ";R
537 PRINT
540 FOR  FIELD=1 TO F
545 PRINT:PRINT HEADING$(FIELD);
550 PRINT FILE$(C,FIELD)
560 NEXT FIELD
590 RETURN
```

THIS IS TO HELP TO DE-MYSTIFY FILES, FIELDS, RECORDS ETC.

A variation on this theme CAN perform a useful task. In the operation of the school library, there is a task that is time consuming and generally held to be ripe for computerisation - "Typing the Overdue Books Lists".

It's the sort of task that just HAS to go! Meanwhile, we can deliver improvement using a microcomputer. It doesn't need long term data storage or retrieval - that's not done now. All that's needed is to store and print names, titles, due dates and notes.

A development of "Data Manager" can do it. The program is shown below and called "Data Manager Overdues". It has provision to list, print and feed paper as well as delete individual records (last minute returns). It lets the user get the benefits of a microcomputer in doing an otherwise tedious task while learning the microcomputer keyboard and becoming familiar with the new technology and its potential benefits. When the time comes to update to something really powerful, we'll be ready.

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```
 9 REM      ***************************
 10 REM     DATA  MANAGER    OVERDUES
 11 REM     ***************************
 12 REM     *    FOR COMMODORE 64    *
 13 REM     ***************************
 14 REM     *BY MR. F. M. JAMES. 1984
 15 REM     ***************************
 20 REM
 25 DIM FILE$(100,4)
 30 REM
 35 FILE$="OVERDUE BOOKS LIST"
 37 HEADING$="S H C S LIBRARY"
 40 REM
 50 PRINT "{CLR}":REM CLEAR THE SCREEN
 60 PRINT:PRINT:PRINT
 62 PRINT TAB(9) HEADING$
 65 PRINT:PRINT TAB(9) FILE$
 99 REM  ****************************
 100 REM  SECTION TO DESIGN THE FILE
 101 REM ****************************
 110 REM
 120 PRINT:PRINT"PLEASE TYPE IN THE ";:INPUT"DATE: ";DATE$
 121 PRINT:PRINT:FILE$=FILE$+" FOR "+DATE$
 135 PRINT
 140 PRINT "-------------------------------------------------"
 150 PRINT FILE$
 160 PRINT "-------------------------------------------------"
 164 PRINT:PRINT"      <YES><NOT CORRECT><HELP>";
 165 GET P$:IF P$="" THEN 165
 167 IF P$="N" THEN 35
 170 F=4:R=1
 180 HEADING$(1)="NAME: "
 185 HEADING$(2)="CLASS: "
 190 HEADING$(3)="TITLE : "
 195 HEADING$(4)="DUE DATE : "
 197 IF P$="H" THEN GOSUB 900:GOTO 300
 199 REM ********************************
 200 REM SECTION TO INPUT RECORD#1
 201 REM ********************************
 205 RECPD=1
 210 GOSUB 400:REM INPUT FIRST RECORD
 299 REM ********************************
 300 REM SECTION TO DISPLAY EACH RECORD
 301 REM ********************************
 310 C=1
 320 IF C<1 THEN C=R
 322 IF C>R THEN C=1
 350 GOSUB 500:REM DISPLAY RECORD
 355 PRINT:PRINT:PRINT:PRINT
 365 PRINT" PRESS <REVIEW><AMMEND><INSERT><LIST>"
 370 GET P$:IF P$="" THEN 370
 375 IF P$="A" THEN INPUT"AMMEND RECORD #";RE:GOSUB 400:GOTO320
 380 IF P$="R" THEN C=C-1:GOTO 300
 381 IF P$="I" THEN RE=R+1:R=R+1:GOSUB 400:GOTO 320
 382 IF P$="L" THEN GOSUB 600:GOTO 320
 385 C=C+1:GOTO 320
 395 REM
 399 REM ********************************
 400 REM SUB-ROUTINE TO INPUT A RECORD
 401 REM ********************************
```


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```
425 PRINT "■":REM CLEARS THE SCREEN
427 PRINT "-----------------------------------------"
430 PRINT FILE$
432 PRINT "-----------------------------------------"
435 PRINT:PRINT"RECORD ";RECRD;" OF ";R
437 PRINT
440 FOR  FIELD=1 TO F
445 PRINT:PRINT HEADING$(FIELD);
450 INPUT FILE$(RECRD,FIELD)
460 NEXT FIELD
461 PRINT:PRINT:PRINT:PRINT:PRINT
462 PRINT "-----------------------------------------"
490 RETURN
499 REM ********************************
500 REM SUB-ROUTINE DISPLAY ONE  RECORD
501 REM ********************************
510 PRINT"■":REM CLEARS THE SCREEN
526 PRINT "-----------------------------------------"
530 PRINT FILE$
532 PRINT "-----------------------------------------"
535 PRINT:PRINT"RECORD ";C;" OF ";R
537 PRINT
540 FOR  FIELD=1 TO F
545 PRINT:PRINT HEADING$(FIELD);
550 PRINT FILE$(C,FIELD)
560 NEXT FIELD
590 RETURN
593 REM ********************************
600 REM SUB-ROUTINE LISTS NAME & TITLE
601 REM ********************************
610 PRINT"■■-----------------------------------------"
620 PRINT,HEADING$:PRINT FILE$
630 PRINT"-----------------------------------------"
640 FOR D=1 TO R
645 PRINT TAB(1);D;
650 PRINT TAB(3);LEFT$(FILE$(D,1),15);
660 PRINT TAB(20);LEFT$(FILE$(D,3),19)
665 IF INT(D/15)=D/15 THEN GET P$:IF P$="" THEN 665
670 NEXT D
675 PRINT:PRINT" PRESS <PRINT><FEED><RERUN><DELETE>"
680 GET L$:IF L$="" THEN 680
682 IF L$="P" THEN GOSUB  700
685 IF L$="F" THEN OPEN 3,4:CMD 3:FOR I=1TO33:PRINT:NEXT:PRINT#3:CLOSE3
687 IF L$="R" THEN RUN
688 IF L$="D" THEN GOSUB 850:GOTO 600
690 RETURN
699 REM ********************************
700 REM SUB-ROUTINE PRINTS OVERDUES
701 REM ********************************
710 OPEN 3,4:CMD 3
715 PRINT:PRINT,,HEADING$
717 PRINT CHR$(129);FILE$
720 FOR I=1 TO R
730 PRINT:PRINT FILE$(I,1);
740 PRINT " OF CLASS ";
750 PRINT FILE$(I,2);","
760 PRINT "THE BOOK ";
770 PRINT FILE$(I,3);
780 PRINT" IS DUE BACK ";
790 PRINT FILE$(I,4)
```


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```
800 NEXT I
810 PRINT:PRINT:PRINT
820 PRINT# 3:CLOSE 3
830 RETURN
849 REM ********************************
850 REM SUB ROUTINE TO DELETE A RECORD
851 REM ********************************
860 INPUT"DELETE RECORD #";DE
865 IF DE<1 OR DE>R THEN 895
870 FOR FIELD=1 TO 4
880 FILE$(DE,FIELD)=FILE$(R,FIELD)
890 NEXT FIELD
892 R=R-1
895 RETURN
899 REM ********************
900 REM 'HELP' SUB-ROUTINE
901 REM ********************
910 R=5
920 FOR J=1 TO R:FOR K=1 TO 4:READ FI$(J,K):NEXT K:NEXT J:RETURN
930 DATA N E STUDENT,12.3,HOUND OF THE BASKERVILLES,29 FEB
940 DATA A N OTHER,12.3,PREVARICATION,19 FEB
950 DATA A TEACHER,12.3,CREATIVE DITHERING,30 FEB
960 DATA A D MIN,12.3,DISINFORMATION,31 FEB
970 DATA MR. RHEE,12.3,LIFE,09 FEB
999 REM
```

Our prime purpose for these exercises for students is to use appropriately in context words like Field and Record. Thence one can go on to use practical databases and gain comprehension of their potential and limitations in terms of the correct words.

There is a temptation to develop the program to save and load files, but is the complication worth it (without Acorn-BASIC)? There are applications to hand that don't need it; one doesn't learn much more about data management from it; surely almost ANY commercial program will do better!

> "A mathematician who studies with Swiss psychologist, Jean Piaget, Papert has become something of a guru of the computer generation predicting that machines will revolutionise learning by taking much of of the mystery out of Mathemetics, Science and Technology. Says He: "The computer can make the most abstract things concrete"
>
> "Here come the microkids - TIME, May, 1982"

I found that working on these programs made learning about Databases and learning to use words like record and field comparatively painless.

- Frank James
Sacred Heart College

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VIII 'Classify'

This program isn't intended to be a good tool for classifying things, ideas or observations. It's intended to assist the user to learn by experience about classifying and classification. Thus the shortcomings of the classification systems used SHOULD be apparent! It also shows clearly that with computers, what you can get out depends on what you have given it to work on ("Garbage In, Garbage Out"), and its use, you'll find, gives great scope for adolescent humour (Computer Aided Insults?).

By changing the data section (lines 500 onwards) the teacher can change what's being classified and the system's initial "given" knowledge (or do I mean ignorance?).

The program can be used in many different subjects to learn about strengths and pitfalls in classifying.

For example, "500 DATA Type of Poem" might make it work for an English teacher who wanted students to appreciate the reasons why we classify poems as we do.

One could try changing the amount and quality (relevance, aptness) of the initial "given" knowledge in the program data statements and see how that affects the outcomes for the students. One should expect that if they don't "own" clears objectives, using this program technique results in confusion.

The computer will display what it has learned if one responds 'P' (for Pedant) to the initial promp "Are you thinking of...."It's worth pointing out that the computer, of itself knows nothing of all this, and has been "told" and has memorized what was told. So who told it what? And why?

There's scope here for students to realize things about computers and about their individual attitudes to them. Moreover, the point overall, isn't to classify, but to learn about how to and how not to classify.

In effect, the user "teaches" the computer to classify some things in terms of what it's told, and can observe the process and can observe the classification as they are built up. Teachers know how readily one can learn the most seemingly esoteric things by teaching them!

CLASSIFY

The following isn't meant to do what a flow chart does. It's to assist with reading the listing - it might be more helpful in class. The numbers in backets are line numbers from the program listing.

The computer reads in "initial knowledge" (line 10)

It "prompts" the user - "Are you thinking of..." (line 335)

It displays all it's "knowledge" if the response is 'P'

(line 50)

It goes through it's known questions until it gets a 'Y' or runs out of questions. (Lines 100-195). Given a 'Y' (line 160), it reprompts

If there are no further "known" questions (line 110) it goes to line 300, where it requests another

On receiving the response 'Y' (line 170) to question number X (line 140) and response number X (line 150), it asks the user (on line 240), 'Is it.....?'(known item number 'X' corresponding to question and response number 'X'.

Having exhausted all possibilities so far "known", it requests a "new" name (line 320), question to ask (line 350), and corresponding response (line 360) to go with it. These are respectively N$(A), C$(A) and R$(A).

Now it displays this name, question and response (lines 370-375) and asks for confirmation (lines 380-390).

Lines 400-450 are a sub-routine to display the names, questions and responses thus far memorised in response to 'P' (line 50). This is what the user can see building up into a classification system - man, just LOOK at the flaws!

Lines 500-550 are the data for the "prior knowledge"which the computer reads at the outset (line 10).

So, the user tells the computer things - questions to ask, responses to seek, and the implications for organisation of knowledge - for classification. As this process goes on, the user can 'view' the overall resultant structure and evaluate this as a classification. Shortcomings become obvious, as do strengths, and one can build on success and avoid pitfalls.

Try these when using the program as it stands (animals); HORSE, ZEBRA, GIRAFFE and so on, or try FISH, SHARK, WHALE, PORPOISE, GOLDFISH. The user is drawn to 'see' the shortcomings of hastily constructed systems of classification.

However, one can take heart - the longer one tries, and the more often one revises a system and tries it out again, the better it will be - how long have most practical systems been in use, and through how many revisions? And widely used classification systems still vary from circumstance to circumstance.

```
5 RESTORE
10 READ N$,A:FOR I=1 TO A:READ N$(I),C$(I),R$(I):NEXT I
15 REM     **** CLASSIFY II ****
16 REM
17 REM     BY FRANK JAMES, SHCS, 1983
18 REM
20 REM
30 PRINT"□":REM CLEAR THE SCREEN
35 PRINT "ARE YOU THINKING OF AN ";N$;" (Y/N/P) ";
40 GET A$:IF A$="" THEN 40
50 IF A$="P" THEN GOSUB 400:GOTO 20
60 REM
70 X=0
100 REM GOES THROUGH KNOWN QUESTIONS
105 REM
110 X=X+1:IF X>A THEN 300
140 PRINT:PRINT:PRINT"QUESTION: ";C$(X)
150 PRINT:PRINT"RESPONSE: ";R$(X);" (Y/N)"
160 GET B$:IF B$="" THEN 160
170 IF B$<>"Y" THEN 110
185 REM
200 REM ASKS IS IT ....
205 REM
240 PRINT:PRINT:PRINT"IS IT ";N$(X);" (Y/N) ";
260 GET C$:IF C$="" THEN 260
270 IF C$="Y" THEN 30
280 REM
295 REM
300 REM INPUTS NEW NAMES AND QUESTIONS
302 PRINT"□":REM CLEARS THE SCREEN
305 A=A+1
310 PRINT:PRINT:PRINT"THIS ";N$;" IS CALLED ";
320 INPUT N$(A)
330 PRINT:PRINT"PLEASE TYPE IN A QUESTION "
340 PRINT"TO IDENTIFY ";N$(A);
350 INPUT C$(A)
360 PRINT:PRINT"TO IDENTIFY ";N$(A);" RESPOND ";:INPUT R$(A)
370 PRINT:PRINT"DOES THE RESPONSE '";R$(A);"'"
372 PRINT:PRINT" TO THE QUESTION '";C$(A);"'"
375 PRINT:PRINT"POSITIVELY IDENTIFY ";N$(A);" (Y/N) ";
380 GET D$:IF D$="" THEN 380
390 IF D$="Y" THEN 30
392 GOTO 340
395 END
400 REM SUB-ROUTINE TO DISPLAY LEARNING
405 REM
410 PRINT:PRINT:PRINT,N$;"!":PRINT:PRINT"I ALREADY KNOW NAMES OF ";A
415 PRINT:PRINT
420 FOR I=1 TO A:PRINT,N$(I):NEXT I
430 PRINT:PRINT:PRINT" PRESS ANY KEY TO CONTINUE ";
440 GET Z$:IF Z$="" THEN 440
450 RETURN
500 REM DATA FOR INITIAL KNOWLEDGE
510 DATA ANIMAL
520 DATA 3
530 DATA A BIRD,HOW DOES IT TRAVEL,FLIES THROUGH THE AIR
540 DATA A FISH,HOW DOES IT MOVE,SWIMS IN THE WATER
550 DATA A HORSE,WHAT SPECIAL FEATURES HAS IT,HOOVES

READY.
```

– Frank James

Sacred Heart College

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IX 5th South Coast Summer School in Computing Wollongong University Dec 7th - 13th 1983

Two South Australian High school students (Sandra Hajszan and Hugh Woods) had the good fortune to be selected as our representatives at this prestigious annual event. Their fares were sponsored by the South Australian Computing Teachers Association, Angle Park Computing Centre and Honeywell Pty Ltd, and billets were provided during their stay. Here is Sandra's report:

Our week in Wollongong was a busy week and the work presented to us was not at all times easy. The trip was a challenge which stimulated my interest to study hard on the subject of computer studies.

The summer school created an atmosphere where every participant can work at their own pace in friendly competition with ones' peers. We were provided with a very full day of activities, varying from lectures, laboratory sessions and a programming workshop. Enough to challenge the best computer scientists (ie the Queenslanders) but the organisers did not neglect those who wished to start at the beginning or those who wished to learn a little more slowly.

This was achieved by dividing us into 3 different groups; Beginners, Advanced and the Master Group.

The Master group was established the year prior, and this year was made up of about 20 students from Illawarra, New South Wales, Interstate and Overseas. The Master group studied the emerging Science of Programming. We also learned how to use modern programming tools and techniques.

The other two groups were mainly made up of students from the Illawarra region. The first group was for students with little previous exposure to computing. The second group was for more advanced computer students.

On the last day we were presented with the opportunity to participate in a programming contest which is organised every year, along the lines of the ACM Scholastic Programming contest in the USA. Unfortunately neither Hugh or I managed to win that one. Not surprising, it was in fact won by a Queenslander.

The contest ended a most enjoyable and interesting week in Wollongong.

Sandra Hajszan

O-O-O

Hugh was also very enthusiastic about the conference, "May I apply next time?" and here, in part, is his summary of the week.

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On arrival in Wollongong, we were met by Mr Max Ross from the Education Department's regional office, and after he had given us a brief tour of the area, he took us to the University for the opening session. We eventually found our billeting families, and soon got to know them. We then received a welcome from Professor Reinfelds, and the school was officially opened by Ms. Hinka Haisma, the Bulletin/Qantas Business Woman of the Year. The first quite hectic day concluded with a short lecture entitled 'Can Computers Understand English?', by Professor Yorick Wilks, from the Department of Language and Linguistics at the Essex University, UK, and a shortened tour of the facilities due to the rain.

On days which followed, we had other interesting Lectures on "The Fifth Generation Computer Systems' by Dr John Debenham, (New South Wales Institute of Technology), and 'Careers in Computing' by Dr Ian Pirie, (University of Wollongong). These lectures were in addition to the other Master Class lectures, on Information; Pascal Programming; the Derivation of Programs; and Applications (including recursion, pointers and the finite state). Coupled with these lectures was a barbecue, movies, and a demonstration of personal workstation computers (eg IBM PC and PC Junior, Digital Rainbow, Apple Lisa, NEC handheld etc.). There were also three special interest sessions which everone attended. These were Computer Assisted Learning (Dr I G Pirie), computer Generated Graphics (Mr Ross Nealon), and Microcomputers (Mr Michael Milway). This last interest session included work on a computer controlled slotcar set, a robot, and several Motorola 6800 trainer boards.

On Tuesday December 13th, competitions were run on three levels (elementary, intermediate and advanced), and participants were given a total of five hours to come up with a solution, which consisted of a maximum of two hours of terminal time. The first prize for the advanced group was an Apple IIe with disc drive, monitor and software, and was presented by a representative of Apple Computers. The second prize for the advanced group was a Microbee 32K computer.

(The Master class participants had to solve the Dutch National Flag Problem, a problem made famous by Dijkstra and Gries. Two students presented two different but equally correct solutions after five hours work - both within minutes of each other. They were Chin Chao Lam (Singapore) and Timothy Withers (Brisbane) and Timothy won the APPLE by the toss of a coin. Ed.)

Apart from the other organised events, we were allowed to use the computers (A UNIX system based on two Perkin Elmer mainframes) from 8.00 am until 10.30 pm each day, if we were not otherwise engaged.

Hugh Wood

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X

Chess Mate!

or.... Fighting Fire with Fire

They are everywhere, these chess playing programs, and they are tough little beasts. They have somehow managed to inveigle themselves onto almost every computer system in existence and they just sit and wait. They wait until some poor mortal decides to pit her/his brain against their silicon and then they sit and think and, more often than not, win.

They were of course quite feeble only a few years ago and they are not that much better now - but they certainly act as if they are! Perhaps the confidence springs from the sheer number of them or the mystique surrounding computers - whatever it is, most humans are cowed when confronted by one.

But no longer need this be the case! We have developed at Angle Park Computing Centre a traitor in their midst - a cute little beast called CHESS MATE! Unlike the rest of its breed, CM (as we have affectionately called it) cannot even play chess - it just pretends to! CM does however know the IDEAS of the game and is not shy in showing them. Given only a couple of hours, CM should provide enough clues to allow anybody a good chance of defeating even the couthest of computers.

There has been much talk in the computer world about 5th generation languages - well, CM is not conversant with that but prefers to be known simply as a fifth columnist - anything rather than one of the rank and file of computer programs.

Chess Mate! is an Apple program - that is, it requires an APPLE II computer with 48K and one disk drive. It fills 2 disks but the main one is Volume 2 - the IDEAS disk. A game of chess usually goes through 3 stages - the opening, middlegame and endgame - and CM shows most of the important ideas of each of these on a chess board on the screen. The user can request notes to the moves of the examples and can let CM show them in AUTO mode or in STEP mode. Other options include a TEST option where the user can try to select the moves played and if not successful on the fourth try, then CM lends a hand, so to speak.

Chess Mate! is menu driven and so here are the major menus which can be selected on the IDEAS disk.

VOLUME 2 THE IDEAS

2.1 What would you like:

1. Read about the ideas
2. Play through the examples
3. Test your memory

2.1.2 Your move!

1. The Options
2. The Openings
3. The Middle-Game
4. The Endgame

2.1.2.2 It's Your move!

0. The first 2 moves

1. Legal's Mate

2. Fool's mate
.. and How to avoid it!

3. A dirty trick!

4. The Fried Liver Attack!

5. [illegible]MBITS - BEWARE!

6. The Queen's Gambit

7. The Noah's Ark Trap & All That!
.. ... or BITS and PIECES

8. Hyper-modern ideas

9. Two MINIATURES!- unannotated

A. All of the above

< Press a no. (0-9) or A or ESC>

2.1.2.3 It's Your move -

0. Attacking the castled king!

1. Typical attacks against g7

2. Useful patterns against h7

3. * The back rank and all that!

4. * Miscellaneous mates - f7 etc.

5. * Tactics - the DISCOVERED and DOUBLE CHECKS

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6. * The PIN and the FORK

7. * Kings still in the centre.

8. * A TAI Attack and torpedoes!

9. * Stunning finishes!

A. All of the Above

.. N.B. * INDICATES UNANNOTATED

‹ Press a no. (0-9) or A or ESC ›

2.1.2.3 It's up to You

0. The basic endings

1. DRAWS - stalemates - 50 moves etc.

2. Plans and thematic moves

3. Passed pawns look for promotion

4. The opposition

5. Introducing the Rook and others

6. The LUCENA and Philidor Positions

7. Bishops and knights

8. ZUGZWANG and the queens

9. DECOYS - the outside pawn
.. and more clever stuff!

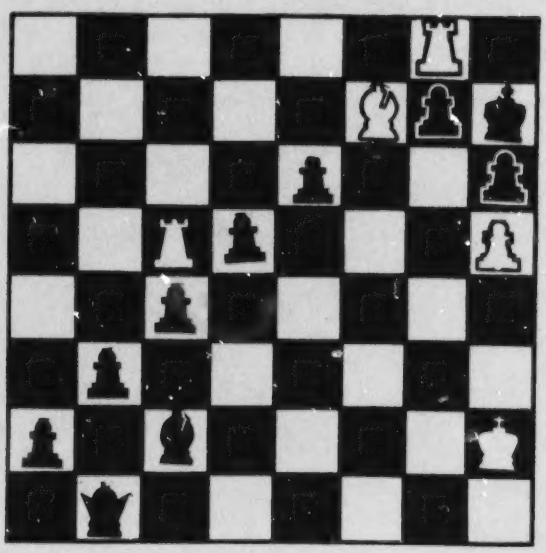
A. All of the Above

‹ Press a no. (0-9) or A or ESC›

The approximate duration of each section running in AUTO MODE with the ANNOTATIONS option set ON and ALL selected is:

The Games: 40 Minutes
The Openings: 60 Minutes
The Middle-Game: 45 Minutes
The Endgames: 75 Minutes

As an example, the following diagram can be found under MIDDLEGAMES number 5.



The position is looking difficult for White - those black pawns are moving down the board - but Chess Mate! sets White the task of winning the game. The obvious try is 1.R(5)-c8

threatening mate, but this will fail due to 1...Pg5 giving an escape square to the King. Black could even try 1...Q-g1ch 2.KxQ, P-a1=Q check etc.

The solution to the problem is as subtle as it is pretty. 1.R-h8ch, Kxh8; 2.R-c8 ch, K-h7; 3.B-g8 ch, K-h8 4.Bxe6 ch, K-h7; 5.B-g8 ch, K-h8; 6.Bxd5 ch and by see-sawing in this manner, White mops up all the pieces. There is in fact a little trick at the end, but to see this you will have to consult CM!

Volume 1 contains 9 of the world's best games, with a brief history and each move annotated. It also has a TACTICS section, which presents 120 positions for the user to solve. They are presented in groups of 10, and range from easy to difficult.

Chess Mate! will soon be available from the A.P.C.C. Please watch future Newsletters for details.

Alan Goldsmith
APCC

XI Reviewing Software - A Practical Approach

The process of reviewing software, as I find it, consists of several stages.

1. First impressions
2. Educational objectives and curriculum applicability
3. Planning a teaching program
4. Observation
5. Recording relevant information in review format.

For an example of this process let us consider the program TAXMAN from MECC Elementary Maths Vol 1. This game is aimed at reinforcing the concepts of prime and composite numbers, multiples and factors.

First Impressions

Initially I glance at the software, flick through the manual and record some first impressions. I am currently using a modified version of "Evaluation of Computer Software" produced by the Queensland Department of Education Curriculum Branch. A multiple choice approach ensures that the completion of the task is simple to complete yet allows for further investigation where appropriate.

TAXMAN makes no use of graphics or sound, and simply appears as text and numerals on the screen. Instructions are clear and easy to follow. The booklet gave background information and teaching suggestions. My initial impression was that the content of the game may be useful, although the presentation was unimaginative.

Educational Objectives and Curriculum Applicabability

This stage involves isolating the educational objectives of the program, and deciding their relevance or otherwise to the curriculum in current practice. The program should offer benefits not otherwise available. There is no point in wasting valuable hands-on time on an activity that can be completed just as effectively without access to the computer. Computer use needs to offer some real benefits to the children and enhance the learning process.

TAXMAN reinforced concepts of classification of number and could be used when teaching the following aspects of mathematics: - Module 15.N.70 (extension), 16.N.73, 18.N.90, 24.N.118 (revision). Thus it had potential for classroom use. The structure of the game was such that the role of the TAXMAN could have been taken by the teacher, as the task was not simple. As it is unlikely that the teacher would have enough time available to work with individual children in this way,

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the computer provided an effective and patient substitute.

Planning A Teaching Programme

In order to review software in an educationally valid setting, it is necessary to incorporate it into a teaching programme, rather than consider it in isolation. It must be a part of the children's learning experiences. Evaluating material purely from the teacher's point of view can be useful, but it does not give a clear indication of the package in use with its intended audience.

TAXMAN was incorporated into a unit based on Module 18.N.90 Classification :- Revise multiples, factors, square numbers, composite numbers, prime numbers, odd and even numbers. A year 5 class was involved.

Initially a pretest was given, based on the module assessment and checkout. As no child fully understood all of these concepts, two teacher-directed lessons were given, incorporating material from Module 18 (plus Modules 15 and 16 where appropriate for particular children). Further analysis of the children's work showed that many children had difficulty in isolating ALL of the factors of a given number. It was in this area that TAXMAN proved to be of value.

TAXMAN is played as follows. For a list of numbers (maximum of 50) the player selects a number and the Taxman gets all of the factors of that number. These numbers are then removed from the list.

For example (maximum of 10)
1 2 3 4 5 6 7 8 9 10

Player takes 7 Total 7
Taxman gets 1 Total 1

New list
2 3 4 5 6 8 9 10

Player takes 9 Total 16
Taxman gets 3 Total 4

New list
2 4 5 6 8 10

Strategy is needed to work out an effective way of beating the Taxman (Real life simulation!!!!) as the Taxman must get at least one factor and at the end of the game receives any remaining numbers. This is a difficult game to win.

As the children were generally unfamiliar with the use

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of the computer, a class lesson was given illustrating the operation of the computer in playing the game. Initially only 10 numbers were used, then 20 then 30. Points of strategy were discussed, and teaching points from the previous lessons reinforced.

Children then worked in pairs on the game, with the proviso that the maximum number allowed was to be 30. While they were playing I observed their reactions and responses. A class list provided detailed information on individual's achievements and difficulties so that I could focus on these and assist where necessary.

Observation

The observation phase of the process serves to provide concrete information about how the children respond to the software, and either reinforces or refutes the previously held opinions of the reviewer. The class teacher also has valuable comment to make in this area.

The results of my observations were somewhat surprising. Although I had considered the game to be unimaginative, the children enjoyed it. Discussion with their partner was animated and resultd in such comments and questions as:

What if...?
What are the factors of X? Is that all?
Is X a prime number?
Are there any square numbers left?
You can't take X because its prime!
What are all the multiples of X?

This verbalization and communication provided exploration and effective reinforcement of the previous instruction, and was an aspect of learning that was difficult to create spontaneously in other classroom situations.

Although the computer was not available to the children for extended periods of time, and in this sense, the integration of the software into the teaching program somewhat artificial, the process proved to isolate an expected benefit of the game. The increased verbalization that resulted is not an aspect I would have expected. In addition the game allowed for the development of problem solving skills as children searched for strategies that would lead to success.

Further discussion with the children lead to the development of a cardboard version of Taxman including a Taxman's Handy Hints page showing relevant factors of numbers 1 to 30. The game is designed for use after the student has become familiar with the computer version.

When I review software relevant to the mathematics

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curriculum I hope to follow a similar process of integration into a teaching program at an appropriate year level. This provides me with the necessary information to make a valid judgement of the material, the children with an additional learning experience, and the teacher with yet another teaching resource.

- Carol Cayley

Flagstaff Hill Primary

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REVIEWS

SOFTWARE

Codes used for APCC Review sheets 44

Mathvader - C Cayley 45
Elementary Mathematics Vol 1 - C Cayley 46
Elementary Vol 7 - C Cayley 50
MECC Volume 10 Elementary - C Cayley 52

Easy Spell - A Preston 54
Easy Script - A Preston 55

Terrible Tales - F Southern 56
Rally A - F Southern 56
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Granny's Garden - W Starick 58

Data Handler - R Taplin 59
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Logo on the Commodore 64 and Atari - in brief. J Roche .. 62

BOOKS

How to Build a Program - A Polonka 63

Let's Talk Apple Logo - J Roche 64
Apple Logo in the Classroom - J Roche 65
Learning Logo on the Apple][- J Roche 66

Structured Programming with BBC Basic - P Sloper 67

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Facit Dot Matrix Printer - D Rosenhain 68

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Codes Used for APCC Review Sheets

EXPLANATIONS AND DETAILS:

1. NAME include version no. if necessary - (40 characters long)
2. AUTHOR / PUBLISHER / DATE PUBLISHED / PACKAGE CONTENTS (manuals, etc)
6. CATALOGUE NO. / REVIEW NO. obtain from A.P.C.C.
8. COMPUTER CODES AP - APPLE II/IIE BB - BBC C6 - C64
   OT - other (specify alongside)
9. EXTRA EQUIPMENT eg. printer, paddles, software etc. (40 chars.)
10. SYSTEM TYPE S - stand alone N - network B - both
11. PROGRAM FORMAT D - Disk T - Tape C - Cartridge R - ROM
12. YEAR LEVEL e.g. Year 3 to 4 , or Year 13 to 99 for adults
14. SUBJECT AREAS

WO words/spelling	GR grammar	LA language arts
FL foreign language	SS social studies	HE health
HI history	MU music	AR art
NU numbers/arithmetic	MA mathematics	SC science
PH physics	CH chemistry	BI biology
GL geology	AG agriculture	EC economics
GE geography	DE design	CS computer studies
GA games/recreation	PS physical skills	HO home economics
BS business studies	CO commerce	TE technical studies
SE special education	LI library	

15. AVAILABLE FROM: use the APCC supplier code, or print in full.
17. VIEW - is it available at APCC for general viewing?

REVIEW

Please include your name, contact address, and date of review.
Mention such things as: (You have almost 2000 characters of room)
Educational aims - What are they, are they valid and are they achieved?
Equal opportunities criteria and cultural bias- acceptable or not
Difficulty of content - constant, selectable by student or teacher
Difficulty of use - Well documented and easy to use for students and teachers?
Style - neutral, descriptive, investigative, competitive, co-operative, correcting, diagnostic, etc.
Are there progress reports or scores or encouragements?
Is it useful for class, group or individual work?
How much time could be needed to introduce the program?
A final recommendation?

Please return to: Angle Park Computing Centre,
Trafford Street
ANGLE PARK SA 5010 COURIER ROUND NO. R 2/15
ph: 2685666

PROGRAM NAME: 1) **MATHVADER** . . . . . .

AUTHOR: 2) APCC. . . . . .

PUBLISHER: 3) APCC. . . . . .

PUBLISHED: 4) _6_/ _83_ (mm/yy)

CONTENTS: 5) Mathvader

APCC CATALOGUE NO: 6) . . . . . REVIEW NO: 7) .1 . .

COMPUTER CODE: 8) A P. . . EXTRAS: 9) . . . . . .

SYSTEM TYPE: 10) .S . PROGRAM FORMAT: 11) D .

YEAR LEVEL RANGE: 12) YEAR . . . 3 to 13) 9.9

SUBJECT AREAS: 14) M A, __ , __ , __ , __ , __ , __ , __ , __

AVAILABLE FROM: 15) APCC, ... , ... , ...

APPROX. COST: 16) $7.50 VIEW AT APCC: 17) .Y . (y/n)

REVIEWER: 18) C Cayley. . . . . DATE: 19) _3 / 84_ (mm/yy)

CONTACT: 20) Flagstaff Hill Primary. . . . .

REVIEW

MATHVADER

A	P	D	EU	EH
Four basic operations	Game Good	Poor	Good	Good

Children enjoy playing Mathvader. The game was written for students to play in their 'spare time', or at the discretion of their teacher. If it is to be a useful learning experience, it is the teacher's responsibility to select parameters with care to ensure the student gains maximum benefit.

The game involves shooting down the invaders, who carry a maths problem in one of the four basic opeations, by firing at them with the correct answer. After every wave a monster invader has to be destroyed. If an invader succeeds in reaching the bottom of the screen the game is over. Althogh this game utilises the success of the arcade game as a motivating factor, the emphasis on destruction is disturbing.

The teacher can control the initial starting speed, speed growth factor, operation, minimum and maximum values of both numbers and the number of Monster Invader problems that appear after each wave of normal invaders.

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There are some minor problems with the program as it stands. The range of numbers for all operations is 0-99. This limits the practice in division possible. It is not possible to have a mixture of operations in the one game. It is not always possible to select the exact examples required. At times an invader would descend without a sum attached and thus it could only be destroyed by typing a '0'.

Children are motivated by the game, which requires reasonable keyboard skills particularly as the waves get faster. However, with careful selection of speed, it is possible for young and relatively inexperienced users to operate the game successfully.

Mathvader needs to be integrated into the teaching program if it is to be of value in giving practice in rapid computation of basic number facts. By carefully selecting the parameters the teacher can ensure that Mathvader continues to be a challenging activity for the student.

PROGRAM NAME: 1) **ELEMENTARY MATHS VOL. 1** . . . .

AUTHOR: 2) ELIZABETH COMPUTING CENTRE. . . . . .

PUBLISHER: 3) TASMANIAN EDUCATION DEPT.. . . . . .

PUBLISHED: 4) __/ _81_ (mm/yy)

CONTENTS: 5) Monkey, School Bus, Escape, Factor Game, Battleships.

APCC CATALOGUE NO: 6) . . . . . REVIEW NO: 7) . . .

COMPUTER CODE: 8) A P. . . EXTRAS: 9) . . . . . .

SYSTEM TYPE: 10) . . PROGRAM FORMAT: 11) D .

YEAR LEVEL RANGE: 12) YEAR . . . to 13) . . .

SUBJECT AREAS: 14) M A, __ , __ , __ , __ , __ , __ , __ , __ , __

AVAILABLE FROM: 15) APCC, ... , ... , ...

APPROX. COST: 16) $ 4 + $8/book . . . VIEW AT APCC: 17) . .
(y/n)

REVIEWER: 18) C Cayley. . . . . DATE: 19) _3 / 84_ (mm/yy)

CONTACT: 20) . . . . . .

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ELEMENTARY MATHEMATICS VOL 1

A-Applicability of use P-Performance D-Documentation EU-Ease EH-Error handling

MONKEY

A	P	D	EU	EH
Four	D&P Fair	Fair	Good	Good

Monkey is a drill and practice program involving the four basic operations. Students have to help the monkey climb the tree to get a coconut by correctly answering maths problems in addition, subtraction, multiplication or division. A small face at the left side of the screen either smiles or frowns to give additional reinforcement. If the child does not give the correct answer in two tries the screen shows the correct answer accompanied by a BEEP. When the monkey climbs high enough to reach the coconut he slides down the tree and runs across the screen.If the child wishes to play again the screen returns to the selection of operations and degree of difficulty.

Students can choose easy, medium or hard problems.

	Addition & Subtraction	Multiplication & Division
Easy	0-9	1-5
Medium	5-20	3-10
Hard	20-100	6-12

There is no time limit in which one has to answer, thus making it suitable for slower students and those with poor keyboard skills.

Younger children particularly enjoyed the monkey retrieving the coconut, and running across the screen. They did comment however, that it would be boring to play for a lengthy period of time as it was too predictable. Older children may prefer a game which involves more action or a greater challenge.

SCHOOL BUS

A	P	D	EU	EH
8.N.29 (Cadet Driver)	D&P Good	Fair	Fair	Good
22.N.113	Good			

School Bus involves the addition or subtraction of multiples of a fixed number.
The student can select from four levels of difficulty:-

Cadet driver	+1 or +2
Trainee driver	+3 - +5
Driver	+6 - +11
Senior driver	-9 - - 16

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The student must "collect" the ten figures waiting at bus stops by giving the correct number of the bus stop. (This involves the addition of multiples in its calculation.) Each stop takes one minute on the clock displayed on the screen. The "students" have to be at school by nine o'clock, so incorrect answers result in their being late.

Younger children may be able to use this program with teacher guidance, although the calculations involved are not simple, and the teacher cannot specify the starting point or exact multiples to be used.

Children in the test group used a variety of strategies to solve the problem. Working in pairs, they discussed the problem animatedly, pointed at the screen, and used pencil and paper to make calculations in addition, multiplication or subtraction.

This program gives practice in calculation within a problem- solving framework, and offers an opportunity for students to share ideas and work cooperatively to reach a solution.

ESCAPE

A	P	D	EU	EH
Problem Solving	Game Good	Fair	Fair	Good

Escape requires the student to help a figure move through a maze by combining 3 numbers with the four basic operations.(Each operation may only be used once. Brackets may also be used.) This number sentence gives the number of spaces (positive or negative) that the man may move. The figure has to drop through a hole in each horizontal row, by landing exactly on that space. There is only one level of difficulty - hard!

This is a complex game that requires students to use a variety of skills. Children may need practice in combining numbers into number sentences using different operations before they use this program. The test group of children worked in pairs. It took some time for them to understand the idea of the game, and they needed an impromptu lesson on negative numbers before they could play effectively.(If the figure runs off the right hand side of the screen, he reappears on the left and vice versa, so it is not necessary to use negative numbers. However the students using the program wanted to be able to move in both directions.) There was much discussion, verbalization of ideas and calculations and frustration when the "wrong" numbers turned up.

This program is better used by older or more able students. It provides a challenging activity in both basic calculations and problem solving.

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FACTOR GAME

A	P	D	EU	EH
15.N.78	Game	Fair	Good	Good
16.N.73	Good			
18.N.98				
24.N.124				

This is a game of strategy which reinforces the concepts of prime numbers, factors and multiples. It is a game for two players in which a list of 37 numbers appears on the screen. One player chooses a number from the grid and this number is added to his total. The other player adds to his total all of the factors of that number. For example, if player 1 chooses 14, player 2 would get 1+2+7. Those numbers are then erased from the grid, and the second player makes his choice. It is not necessary to give your opponent any factors. The game continues until all numbers have been used. The player with the highest total wins.

This game provides an opportunity for children to explore factors and multiples within the game format, and problem solving skills are practiced as students decide on strategies.

BATTLESHIPS

A	P	D	EU	EH
24.M.115	Game	Fair	Good	Good
25.M.118	Fair			

Battleships is a well-known game involving ordered pairs. An 8 X 8 grid hides 8 enemy ships. These are 2 aircraft carriers (4 shots - i.e. 4 adjacent squares), 2 Battleships (3 shots), 2 Cruisers (2 shots), 2 Minesweepers (1 shot). A shot is recorded by typing in the coordinates of the square you are aiming for. No numbers appear on the grid, so much pointing and counting takes place as studonts try to calculate the location of the required square. A card indicating the size of the different ships would also prove useful.

The ships lie horizontally and vertically on the grid. They do not touch each other. Players are only allowed thirty shots. This makes the game quite difficult as twenty accurate shots are necessary to dispatch the enemy fleet. A cross marks a hit, and the type of craft hit is indicated at the bottom of the screen. A miss is marked by a solid block of colour.

At the end of the game, if you have failed to locate and sink all of the enemy craft, you are advised to wave your white flag and beg for mercy. The positions of the hidden ships are not revealed, which is rather frustrating.

Battleships provides practice in coordinates in a game which also involves strategy and planning, but again utilizes an aggressive theme which may not be entirely appropriate.

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PROGRAM NAME: 1) **ELEMENTARY VOL. 7** . .

AUTHOR: 2) MECC . . . . . .

PUBLISHER: 3) MECC. . . . . .

PUBLISHED: 4) _9_/ _81_ (mm/yy)

CONTENTS: 5) Disk and manual

APCC CATALOGUE NO: 6) . . . . . REVIEW NO: 7) .1 . .

COMPUTER CODE: 8) A P. . . EXTRAS: 9) . . . . . .

SYSTEM TYPE: 10) .S . PROGRAM FORMAT: 11) D .

YEAR LEVEL RANGE: 12) YEAR . . . 2 to 13) 7

SUBJECT AREAS: 14) M A, __ , __ , __ , __ , __ , __ , __ , __ , __

AVAILABLE FROM: 15) APCC, ... , ... , ...

APPROX. COST: 16) $12.00 VIEW AT APCC: 17) .Y . (y/n)

REVIEWER: 18) C Cayley. . . . . DATE: 19) _3 / 84_ (mm/yy)

CONTACT: 20) Flagstaff Hill Primary. . . . .

REVIEW

All programs reviewed are technically error - free,(unless otherwise specified) use appropriate messages in trapping errors when used by students. They have clear and comprehensive documentation including aims and objectives, teaching suggestions and pages that may be copied for student use.

Brief observations about the program appear at the beginning of each review section. The abbreviations used are A (Applicability - module references), P (performance- type and quality), D (Documentation), EU (Ease of use), and EH (Error Handling - in a technical sense).

CATERPILLAR
TRAIN
A IS FOR APPLE
PICTURES
WORDS

The above programs do not relate to mathematics and are not reviewed at this time.

SHAPES

A	P	D	EU	EH
	Game			
2.S.6	Fair	Good	Good	Fair
3.S.7				
3.S.8				
5.S.13				

* A colour monitor is needed for this game.
Shape is a game similar to "Memory" or "Concentration". A series of boxes are displayed on the screen. Students choose a box, and a coloured shape is displayed for a length of time. They must try to match the pairs in both colour and shape. Students can play alone or with a partner.

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Colours used are red and green. Shapes used are square, rectangle, circle, hexagon and triangle. The resolution of diagonal lines and circles is poor.At times, the square only had 3 sides or the circle didn't join up properly. These features detract from the game.

This type of game can provide enjoyable practice in matching shapes and colours, but this can be achieved just as easily (and far more cheaply) with a pack of prepared activity cards.

SMILE

A	P D & P	D	EU	EH
3.N.8 3.N.11	Good	Good	Good	Good

Smile is a program which gives children practice in counting objects up to nine.

A number of objects are displayed on the screen together with the numbers 1 to 9. The children count the objects and enter the appropriate number. A correct answer is reinforced by a smiling face, together with the correct number. If a student types an incorrect number, that number is crossed out, and the student has another turn.

Nine problems are presented using a variety of objects.The test group of children (who had only been at school for four weeks) found the program enjoyable and easy to use. No reading is involved. The only difficulty arose at the end of the program when the student is asked "Do you want to play again? y/n", although one boy had already worked out the necessary response by watching the teacher. Greater familiarity with the operation of a computer would largely solve this problem.

Smile could be used with small groups as well as individual children. It provides enjoyable counting practice for young children, as well as a gentle introduction to the computer keyboard.

WUZZLE

A	P D & P	D	EU	EH
3.N.8 3.N.11	Good	Good	Good	Good

Wuzzle provides practice in counting mixed objects up to nine. A group of two different types of objects are displayed in a frame. A picture at the bottom of the screen indicates which to count. No numbers are displayed on the screen, so the children must locate the numeral on the keyboard themselves.

A correct response on the first try is reinforced by a graphic Wuzzle performing tricks, and after the second try by a stationary Wuzzle. If the student gives an incorrect response, their answer is crossed out on the screen. After two incorrect responses the extra objects are erased leaving only the objects to count. After the third error, the correct answer is shown, although the objects are not counted on the screen. Five problems are presented and each requires two answers.

Very little reading is required. The test group of children found the program easy to use and enjoyable.

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SPACESHIP

A	P D & P	D	EU	EH
5.N.18	Poor	Good	Good	Good

Spaceship is a drill and practice activity involving the addition of two groups of less than five objects. A vertical format for the addition sum is used, and when the correct answer has been typed, the total sum is repeated in a horizontal format.

As each correct answer is typed, part of a spaceship appears, until after three correctly worked problems, the spaceship fires on and destroys a flying saucer. At the end of nine correctly answered problems there is a space battle.

This aspect of the program is disturbing. Reinforcement in such an aggressive manner is not appropriate for the young children for whom the program is intended.
This program is best used by individual students, as they can point to and count the objects on the screen.

PROGRAM NAME: 1) **MECC VOL. 10 ELEMENTARY** . . . . . .
. . . .
AUTHOR: 2) MECC. . . . . .
PUBLISHER: 3) MECC. . . . . .
PUBLISHED: 4) _9_/ _81_ (mm/yy)
CONTENTS: 5) Quadrilaterals - Quiz on Quads & Area & Perimeter. . .
APCC CATALOGUE NO: 6) . . . . . REVIEW NO: 7) . . .
COMPUTER CODE: 8) A P. . . EXTRAS: 9) . . . . . .
SYSTEM TYPE: 10) . . PROGRAM FORMAT: 11) . .
YEAR LEVEL RANGE: 12) YEAR . . . to 13) . . .
SUBJECT AREAS: 14) M A, __ , __ , __ , __ , __ , __ , __ , __
AVAILABLE FROM: 15) APCC, ... , ... , ...
APPROX. COST: 16) $ 4 + $8/book . . . VIEW AT APCC: 17) . .
(y/n)
REVIEWER: 18) C Cayley. . . . . DATE: 19) _3 / 84_ (mm/yy)
CONTACT: 20) . . . . . .

All programs reviewed are technically error - free,(unless specifically mentioned in the individual review) use appropriate messages in trapping errors when used by students. They have clear and comprehensive documentation including aims and objectives, teaching suggestions and pages that may be copied for student use.

Brief observations about the program appear at the beginning of each review section. The abbreviations used are A (Applicability - module references), P (performance- type and quality), D (Documentation), EU (Ease of use), and EH (Error Handling - in a technical sense).

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QUADRILATERALS

QUIZ ON QUADRILATERALS

A	P	D	EU	EH
20.S.49	Tutorial Fair	Good	Good	Good

Quadrilaterals is a tutorial program with a short quiz following. The program leads the student through the topic including definitions of quadrilateral, parallelogram, rectangle, square, rhombus and trapezoid. Questions are asked frequently to ascertain whether the student understands the subject being covered. If the student gives an incorrect response the particular area is reviewed. The teacher's notes contain a variety of classroom activities.

Although module 20.S 49 is covered in the program content there are some differences in the definitions used. For example, the module guidelines define quadrilateral as a simple closed polygon with four straight sides, whereas the program uses the less specific definition of a geometric figure with four sides. This may prove confusing to some children, particularly if the teacher is keen to use correct terminology and specific definitions.

A true/false or multiple choice quiz at the end of the program gives the student the opportunity to test their understanding of the section. If they give three incorrect answers the quiz stops and the student is advised to see their teacher for further help.

AREA and PERIMETER of TRIANGLES and QUADRILATERALS

QUIZ on AREA and PERIMETER

A	P	D	EU	EH
	Tutorial Poor	Good	Good	Good

This tutorial program on the area and perimeter of triangles and quadrilaterals cannot be related to specific modules. Its emphasis on the use of formulae rather than concept renders it inappropriate for use with module materials. It is not sequential, and omits the units of measurement of length and area in many cases. In those instances where a unit of measurement is used it is the inch or square inch which is referred to. Explanations are not clear. A short quiz follows the tutorial program.

C. Cayley

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PROGRAM NAME: 1) **EASY SPELL.**

AUTHOR: 2) SIMON TRANMER. . . . . .

PUBLISHER: 3) COMMODORE BUSINESS MACHINES. . . . . .

PUBLISHED: 4) __? / 82__ (mm/yy)

CONTENTS: 5) User Guide, 2 copies of Program disk, Dictionary disk. .

APCC CATALOGUE NO: 6) . . . . . REVIEW NO: 7) 1. . .

COMPUTER CODE: 8) C6 EXTRAS: 9) Printer . . . . . .

SYSTEM TYPE: 10) . S. PROGRAM FORMAT: 11) D, T. .

YEAR LEVEL RANGE: 12) YEAR .7 . . to 99 13) . . .

SUBJECT AREAS: 14) MO , __ , __ , __ , __ , __ , __ , __ , __ , __

AVAILABLE FROM: 15) Shop, ... , ... , ... , ...

APPROX. COST: 16) $ 60. . . . . VIEW AT APCC: 17) y. . (y/n)

REVIEWER: 18) Anne Preston. DATE: 19) _3_ / _84_ (mm/yy)

CONTACT: 20) Coromandel Valley Primary. . .

R E V I E W

a. EASY SPELL is a spelling checker which compares the text of the user's
b. file with a master dictionary disk. It must be used in conjunction with
c. the Easy Script word processing package. The 20,000 word master dictionary
d. disk is unalterable, but approximately 12,000 words may be added to the user
e. dictionary. When checking for spelling, the cursor scans the text until it
f. finds either an unrecognized word or a spelling error. The word may then be
g. stored, corrected or passed over. If required, those words may be listed at
h. the end of the check.
i. Australian stockists keep the British spelling version, but an American and
j. a combined version are available.
k. Easy Spell performs a number of other functions. It will count the words in a
l. text, the sentences, the paragraphs and the number of unique words. It will
m. count the number of times a particular word occurs. It will print the user
n. dictionary, and delete from, or add to it. It will list words in alphabetical
o. order, in descending or ascending frequency. The maximum time for any
p. function is 3 minutes.
q. The well laid-out, clear manual suggests that a blank dictionary disk may be
r. built from scratch to monitor a child's vocabulary or for foreign language
s. use (as long as it can be written on a standard keyboard). While these may
t. be useful to an individual user, they are unlikely to be of much practical
u. use in the average classroom.
v. Easy Spell's main limitations are threefold: 1) Before purchasing, no listing
w. of the master dictionary is available. 2) Actual corrections still need to be
x. done with the aid of a printed dictionary. 3) Disk swapping makes it too
y. clumsy for a network. Despite these objections, individual users,
z. particularly poorer spellers, may find it reassuring and time saving.

PROGRAM NAME: 1) **EASY SCRIPT**

AUTHOR: 2) SIMON TRANMER. . . . . .

PUBLISHER: 3) COMMODORE BUSINESS MACHINES. . . . . .

PUBLISHED: 4) __? / 82__ (mm/yy)

CONTENTS: 5) Manual, 2 copies of Program disk, Command Ref. Card

APCC CATALOGUE NO: 6) . . . . . REVIEW NO: 7) 1. . .

COMPUTER CODE: 8) C64 EXTRAS: 9) Printer . . . . . .

SYSTEM TYPE: 10) . S. PROGRAM FORMAT: 11) B. .

YEAR LEVEL RANGE: 12) YEAR .7 . . to 99 13) . . .

SUBJECT AREAS: 14) BS, LA, CO, SA, __ , __ , __ , __ , __

AVAILABLE FROM: 15) Shop, ... , ... , ... , ...

APPROX. COST: 16) $ 88. . . . . VIEW AT APCC: 17) y. . (y/n)

REVIEWER: 18) Anne Preston. DATE: 19) _3_ / _84_ (mm/yy)

CONTACT: 20) Coromandel Valley Primary. . .

R E V I E W

EASY SCRIPT is a word processing package containing a clear and comprehensive manual, a handy reference card of commands and 2 copies of the program disk. There is no training disk.

When operating, the screen width can be set between 40 - 240 columns and the colour of the border, screen and cursor can also be selected. Although the screen layout is not controlled, at any time the text can be viewed as it will appear on paper.

Text editing and manipulation are performed with very simple commands which can be brought into operation at any point in the program - this simplicity is a highlight.

Functions available for text layout include right hand justification, centering and print enhancing (through darkening, increasing size or condensing). Files can be linked together temporarily or permanently, can be searched to locate the occurence of a desired chain of characters and personalized letters can be created from a standard text.

The manual is laid out in basic word processing sections and more advanced sections. From this, older children could easily teach themselves enough to edit written language exercises; not so for younger children - the manual is clearly not geared to them.

The initial screen displays are off-putting for younger children. After a title screen containing rapidly changing bright lights, comes the unfriendly and, for them, daunting request for selection of text width, disk or tape and printer type. (Almost any of the latter is suitable). Edit Mode then has to be selected.

Easy Script has many uses for small businesses and many applications in secondary school business and commerce studies.

A Preston

PROGRAM NAME: 1) **TERRIBLE TALES** . . . . . .

AUTHOR: 2) TONY GRAY

PUBLISHER: 3) LADYBIRD - LONGMAN. . . . . .

PUBLISHED: 4) _?_ / _83_ (mm/yy)

CONTENTS: 5) Booklet, disk & tape. . . . . .

APCC CATALOGUE NO: 6) . . . . . REVIEW NO: 7) . .1 .

COMPUTER CODE: 8) . .BB . EXTRAS: 9) .B Model . . . . . .

SYSTEM TYPE: 10) .B . PROGRAM FORMAT: 11) .B .

YEAR LEVEL RANGE: 12) YEAR . . . 2 to 13) . 4. .

SUBJECT AREAS: 14) LA , __ , __ , __ , __ , __ , __ , __ , __ , __

AVAILABLE FROM: 15) Shop, P I T M , ... , ...

APPROX. COST: 16) $. . . . . VIEW AT APCC: 17) . Y. (y/n)

REVIEWER: 18) F Southern. . . . . DATE: 19) _2_ / _84_ (mm/yy)

CONTACT: 20) Magill Junior Primary, Adelaide St. Magill . . .

R E V I E W

This program invites students to type in their own perception of a monster or giant by answering a series of questions. It then runs all the statements together to form a story.

A second part of this program is to be a resource. An explanation is provided about 6 monsters. The program has limited use in the school and the language used is not at all appropriate. Therefore I would not recommend its use.

PROGRAM NAME: 1) **RALLY A.**

AUTHOR: 2) TONY GRAY

PUBLISHER: 3) LADYBIRD - LONGMAN. . . . . .

PUBLISHED: 4) _?_ / _83_ (mm/yy)

CONTENTS: 5) Booklet, disk & tape. . . . . .

APCC CATALOGUE NO: 6) . . . . . REVIEW NO: 7) . .1 .

COMPUTER CODE: 8) . .BB . EXTRAS: 9) .B Model . . . . . .

SYSTEM TYPE: 10) .B . PROGRAM FORMAT: 11) .B .

YEAR LEVEL RANGE: 12) YEAR . . . 1 to 13) . 9. .

SUBJECT AREAS: 14) MA , __ , __ , __ , __ , __ , __ , __ , __ , __

AVAILABLE FROM: 15) Shop, P I T M , ... , ...

APPROX. COST: 16) $. . . . . VIEW AT APCC: 17) . Y. (y/n)

REVIEWER: 18) F Southern. . . . . DATE: 19) _2_ / _84_ (mm/yy)

CONTACT: 20) Magill Junior Primary, Adelaide St. Magill . . .

R E V I E W

This program is Maths Drill with a gimmick. The Junior Primary children enjoyed the initial experience but the appeal wore off quickly. The age range is quite large so it can be used by Junior Primary, Primary and possibly Secondary students. The appeal would be more with Primary students however.

The aim of the program is to give students practice with addition, subtraction, multiplication and division whilst manipulating a car along a grid to 5 towns. The car runs out of fuel frequently and this necessitates answering drill questions to enable the distance to be covered. Scores and time taken to cover the distance are given at the end of each game.

The program is useful for individual work and is easily introduced for levels 1,2. However, for levels 3,4 the equation layout is poor and useful only for older children.

PROGRAM NAME: 1) **SHEEPDOG**

AUTHOR: 2) TONY GRAY

PUBLISHER: 3) LADYBIRD - LONGMAN. . . . . .

PUBLISHED: 4) _?_ / _83_ (mm/yy)

CONTENTS: 5) Booklet, disk & tape. . . . . .

APCC CATALOGUE NO: 6) . . . . . REVIEW NO: 7) . .1 .

COMPUTER CODE: 8) . .BB . EXTRAS: 9) .B Model . . . . . .

SYSTEM TYPE: 10) .B . PROGRAM FORMAT: 11) .B .

YEAR LEVEL RANGE: 12) YEAR . . . 1 to 13) . 3.

SUBJECT AREAS: 14) AC , LA , __ , __ , __ , __ , __ , __ , __ , __

AVAILABLE FROM: 15) Shop, P I T M , ... , ...

APPROX. COST: 16) $. . . . . VIEW AT APCC: 17) . Y. (y/n)

REVIEWER: 18) F Southern. . . . . DATE: 19) _2_ / _84_ (mm/yy)

CONTACT: 20) Magill Junior Primary, Adelaide St. Magill . . .

R E V I E W

This programme is suitable as an introduction to the computer for young children. However, its aim is to stimulate the language and logical thought processes whilst the children attempt to direct simulated animals. Cursor keys are used to move the animals. Directions are very clear and simple, language is appropriate. It appeals to young children because it uses animal shapes and a well known nursery rhyme. Very little reading is necessary by the children. It may be introduced quickly and is best used by two children at a time in order that language is fostered. Although the programme notes advocate it's use for children aged five years to nine years I think it could be used for younger children four years - eight years. Compass directions are incorporated for the older students and can be sucessfully used with a whole class lesson. Record keeping is an interesting dimension to this programme.

F Southern

GRANNY'S GARDEN - a BBC Adventure

This program can be loosely defined as an adventure game, but in reality, it is more than just a recreational game.

Many computer users are no doubt familiar with the usual adventure game where the intrepid hero/heroine battles almost insurmountable odds to find treasure, rescue imprisoned goodies, kill baddies, and hosts of other socially acceptable activities. This is the problem that these programs present to many classroom teachers - to succeed the student needs to be an anti-social version of a cross between the six billion dollar man and the incredible Hulk!

Enter Granny's Garden

The program has been written with the classroom in mind. The task is to rescue the children who have been hidden by the wicked witch. To succeed there are puzzles to solve, rooms to explore, and traps to avoid - no killing, no stealing and if you do fail - no death, just sent home to begin again!

The standard of programming seems quite high with many features that make it suitable for the young and/or first time user. For example, all text is double height, incorrect responses are ignored (rather than some obscure error message or unpredictable result). All responses are displayed with the initial letter in upper case and all subsequent letters in lower case.

Users should not be put off by the statement from the documentation that:

"The average 7 year old can complete the program..."

Many teachers who have used the program as part of APCC inservice activities can attest to both the increasing difficulty of tasks through the adventure and to the way in which the program captures one's interest and attention.

The accompanying documentation provides not just hints and tips for classroom implementation, but also suitable follow-up and link activities.

A highly recommended program if you are keen to try an adventure game as part of your language/arts programme, and you have access to a BBC microcomputer.

Wayne Starick

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PROGRAM NAME: 1) **DATA HANDLER**

AUTHOR: 2)

PUBLISHER: 3) MECC. (2201). . . . . .

PUBLISHED: 4) _4_ / _83_ (mm/yy)

CONTENTS: 5) Program Disk and manual. . . . . .

APCC CATALOGUE NO: 6) . . . . . REVIEW NO: 7) . 1. .

COMPUTER CODE: 8) . AP. . EXTRAS: 9) Printer & 2 Drives. .

SYSTEM TYPE: 10) .S . PROGRAM FORMAT: 11) . D.

YEAR LEVEL RANGE: 12) YEAR . 13 . to 13) . 99. .

SUBJECT AREAS: 14) SA , __ , __ , __ , __ , __

AVAILABLE FROM: 15) APCC. . . . , ... , ... , ...

APPROX. COST: 16) $ 12. . VIEW AT APCC: 17) . Y. (y/n)

REVIEWER: 18) R Taplin. . . . . DATE: 19) _3_ / _84_ (mm/yy)

CONTACT: 20) SACAE . . . . . .

R E V I E W

The DATA HANDLER is a small-scale data entry and retrieval system which allows the user to store, modify and retrieve data in a variety of forms. It requires an APPLE II with 48K of RAM, a printer and two disk drives. The program provides for up to 525 records each less than 255 characters in totnl length, or alternatively, 1050 records of less than 127 characters. The user may define up to 80 fields. The program is supported by a substantial manual (84 peges) which cnntains a clearly written overview of the system, and detailed instructions (perhaops in places unnecessarily repetitive) for its use.

Attractive features of the program are:

1) It is a simple matter to prepare a new application and equally simple to print data in a variety of formats.
2) Data may be sorted and searched using any combination of field.
3) Data entry may be speeded by specifying default values.
4) The program prints adhesive labels in rows up to 4 across. The weaknesses of the program are unfortunately equally striking. Principal among these are:

1) Data entry and data editing are combined into one function. The unwitting user can encounter difficulties in entering records with similar initial fields, such as might happen when two children have identical surnames.
2) It is not possible to review records without using a formal search. Working through a file to modify several records is a tedious and awkward process.
3. The program is generally slow, particularly given the modest amount of data that it is handling. A test seach andd test sort with a file of 100 names and addresses each took approximately one minute.
4. There is no provision for appending explanatory documentation to a file. The manual encourages the user to keep a separate written log for this purpose.
5. There appears to be no provision for escaping from time consuming operations such as sorting and searching and the printing of labels and reports.

PROGRAM NAME: 1) **GRADE MANAGER**

AUTHOR: 2)

PUBLISHER: 3) MECC. . . . . .

PUBLISHED: 4) _5_ / _83_ (mm/yy)

CONTENTS: 5) Program Disk and manual. . . . . .

APCC CATALOGUE NO: 6) . . . . . REVIEW NO: 7) . 1. .

COMPUTER CODE: 8) . AP. . EXTRAS: 9) Printer . .

SYSTEM TYPE: 10) .S . PROGRAM FORMAT: 11) . D.

YEAR LEVEL RANGE: 12) YEAR . 13 . to 13) . 99. .

SUBJECT AREAS: 14) SA , __ , __ , __ , __ , __

AVAILABLE FROM: 15) APCC. . . . , ... , ... , ...

APPROX. COST: 16) $ 12. . VIEW AT APCC: 17) . Y. (y/n)

REVIEWER: 18) R Taplin. . . . . DATE: 19) _3_ / _84_ (mm/yy)

CONTACT: 20) SACAE . . . . . .

The GRADE MANAGER is an integrated series of programs which together provide a sophisticated package for developing class lists, entering individual test scores, calculating interim and final results, and preparing frequency distributions and summary statistics. The package may also be used for printing reports for individual students, including teacher comments. The GRADE MANAGER requires an Apple II with 48K of RAM, at least one disk drive, and a printer. The program disk is accompanied by a well-organized and informative manual (66 pages). The manual provides simple and clearly written instructions for using each function, and extensive information about the assessment modes it allows and the statistical procedures it uses for processing individual and class results. There is no index but a quick reference guide is a satisfactory alternative.

All functions of the package are available to the user through a series of menus, with password protection on initial entry. Screen displays are thoughtfully designed and keyboard controls are simple and consistent throughout all program functions. Most users will find that they only need to refer to the manual for occasional background information. A series of supplementary utilities avoid the need to leave the program to prepare or backup data disks.

Overall, the GRADE MANAGER is excellent in presentation and outstanding in the balance that has been achieved between ease of use and flexibility. The latter point should be noted. A significant limitation of the package is that it assumes a US quarterly/semester/year grading system and imposes one format and set of headings for student reports. The user has to work within the framework imposed by these restrictions. The authors suggest how the system may be adapted to term-based and other assessment programmes. In practice, these restrictions are likely to be only a minor irritation for a great many applications.

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PROGRAM NAME: 1) **MECC SCIENCE VOL. 1. .**

AUTHOR: 2) Community Education Resources. . . . . .

PUBLISHER: 3) MECC. . . . . .

PUBLISHED: 4) _9_ / _80_ (mm/yy)

CONTENTS: 5) Disk and manual. . . . . .

APCC CATALOGUE NO: 6) . . . . . REVIEW NO: 7) . 1. .

COMPUTER CODE: 8) . AP. . EXTRAS: 9) . . . . . .

.

SYSTEM TYPE: 10) .S . PROGRAM FORMAT: 11) . D.

YEAR LEVEL RANGE: 12) YEAR . .8 . to 13) . 12. .

SUBJECT AREAS: 14) BI , SC , CH , PH , __ , __ , __ , __ , __ , __

AVAILABLE FROM: 15) APCC. . . . , ... , ... , ...

APPROX. COST: 16) $ 12. . VIEW AT APCC: 17) . Y. (y/n)

REVIEWER: 18) R Taplin. . . . . DATE: 19) _3_ / _84_ (mm/yy)

CONTACT: 20) SACAE . . . . . .

R E V I E W

This program simulates the annual migration of the gray whale. The student selects a starting point for a migration, swimming speed, and responses to a small number of environmental contingencies along the way.

WHALES is claimed to teach the student some behavioural traits of the gray whale and to develop understanding of how swimming speed, weather and predation may affect the success of the annual migration.

While it is reasonable to expect that the program would contribute towards the achievement of each of these learning objectives, its contribution would necesarily be small. The range of behaviours and contingencies provided for is very limited, and the program's responses to decisions made by students are correspondingly narrow and stereotyped. There is also at least one unfortunate inconsistency.

The program makes no use of the computer's graphics potential.

R Taplin

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LOGO ON COMMODORE and ATARI - IN BRIEF

We have been using both of these low-cost machines as part of our attempt to keep up with the changing market. The Commodore 64 version of Logo arrived here late last year and immediately looked impressive. It comes with a well documented user manual of about 400 pages. There is a program disk and a Logo Utilitites disk. The total package costs about $80.00. Commodore's version of Logo seems to have all the features of MIT Logo and more.

It was the first to have "SPRITE" GRAPHICS. This simply means that as well as having a single turtle, often represented by a simple triangle, you could have up to eight separate other objects available to move around the screen at any one time. You are provided with over thirty different shapes to use, being either animals, vehicles, geometric, or some assorted shapes. You can also draw your own SPRITES. Thus the opportunity for greater logic problem solving and the development of more interesting and complex "games" entered the realm of schools computing. Without doing a full review here, suffice it to say that Commodore's Logo seems to be a well thought out and documented software package, the main drawback seeming to be the two minutes of time taken to load the program from disk, which could be a problem in a classroom situation. Hopefully, we will receive a full review of this Logo from one of the schools where it is currently being used.

Then along came Atari Logo. The Atari 800XL computer arrived only a few weeks ago and of the software seen, Logo was the most impressive. The package consists of one ROM cartridge which plugs into the computer, and two manuals, one for an introduction and the other for later reference. I'm not sure why two is better than one. We have had time for only a shallow look at it. By far the most outstanding feature is that you have control of only four SPRITES, but with the power to move all four at the same time while you are interactively typing in commands. What this means is that you can have outstanding, colourful animation on the screen and not have to just sit back and watch it, but take control of it while the animation is in progress. As the Atari is practically non-existant in South Australian schools, this version of Logo can only demonstrate where the other Logo versions may go.

In conclusion, the latest versions of Logo to enter the market are revealing innovative changes to Logo. These changes are very attractive and they increase the demands on problem solving, but they do not diminish the power of other established versions of Logo in regard to educational computing. It is the basic concept behind providing an environment for self-directed learning that is important.

John Roche

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Title: **"How to Build a Program"**
Author: Jack Emmerichs
Publisher: Dilithium Press
Cost: $39.95 (346 pages)
Supplied by: Australia & New Zealand Book Co Pty Ltd
PO Box 459
BROOKVALE NSW 2100
Reviewed by: Anne-Marie Polomka

The aim of this book is to introduce the novice "computerist" to sound professional techniques for program (system) analysis, design and development. It certainly achieves this aim.

At the price, this book is obviously not suited as a student handbook, nor was it intended to be. However, it would make a useful addition to the library as a teacher and student reference book.

The chapter headings are:

1. What is a program?
2. Consideration for computer programs.
3. When should a program be written? (Feasibility study.)
4. What should the program do? (The general design.)
5. How will the program work? (The detailed design.)
6. Implementing the program. (The implementation.)
7. How can the program be changed?

Every chapter concludes with a review of all the major points discussed in the chapter for later reference. Also included are several appendices, a useful glossary of terms and a bibliography of other books which may be useful to beginning programmers.

The book is well presented and written in an easy-to-understand manner. It realistically traces a computer project from recognition of need, to completed program, covering likely problems encountered and possible methods of prevention and debugging.

The author has selected both BASIC and Pascal to illustrate his examples, although the content is not tied in any way to any specific computer language. The book leans heavily towards structured technique, a very useful tool in program design and coding. The author's description of these techniques is simple and clear: he uses everyday analogies rather than technical jargon in his explanations.

Anne-Marie Polomka

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BOOK REVIEW

TITLE: **Let's Talk Apple Logo**

AUTHORS: L. Nevile, C. Dowling

PUBLISHER: Prentice-Hall Australia, 1983

LOGO VERSION: MIT and Apple

YEAR LEVEL: Years 4 to 8

COST: Approximately $5.50 (75 pages) each book

AVAILABLE: Order through most bookshops

REVIEWER: John Roche, APCC

RECOMMENDATION: Well worth buying both books for Primary schools.

This is a two book set; one for teachers and one for students. It is aimed at easing very young children into using both an Apple computer and Logo. It is also aimed at assisting the teacher into spreading a few computers amongst a full class of students.

Each of the twenty lessons consists of about ten minutes work to be done at the computer (hands-on). Activities are related but not dependant so children can take their turn on the computer, in groups of up to three students, at any time during a session.

Children in the lower grades will lack the reading skills to work directly with the book, but appealing sketches can provide the basis for genuine learning activities. Older children, parents and teachers should breeze through the lessons unaided. The hands-off activities really only suit younger children, so teachers may need to upgrade the activites for their group.

It provides a very good introduction to Logo, covering most of the not-too-technical aspects and leaving the rest for later. One nice aspect of this book is the way it encourages students to play with Logo, using what the authors call hum-tunes ("like a tune you teach the turtle"). It avoids the usual problem solving of drawing squares and triangles and provides the freedom that Papert designed Logo for.

TITLE: **Apple Logo in the Classroom**

AUTHORS: Minnesota Educational Computing Consortium (MECC)

PUBLISHER: MECC

LOGO VERSION: Apple

YEAR LEVEL: Years 5 to adult

COST: $8.00

AVAILABLE: Order through APCC

REVIEWER: John Roche, APCC

RECOMMENDATION: Well worth buying for Primary and Secondary Schools.

This is a ten module, highly structured course in Apple Logo. It is a very thorough exploration of most classroom aspects of Logo. This book provides teacher information regarding expected outcomes, material needs, classroom setup, time needed, directions, and follow ups. It also provides many photostat and overhead transparency masters for teacher presentations, student worksheets, revision (?!), student journals and games.

The book seems to cover everything for students and teachers in detail, leaving you to wonder where all the fun of self-directed learning has gone. It does provide a good source of reproducible material, but it is probably advisable to cull out the best and let the students discover for themselves.

LOGO - SOMETHING NEW?

Not all Logos are the same. MIT is the original version though Apple Logo is now the most common. BBC, VIC-20, Commodore-64 and Atari each now have their own versions of Logo or turtle graphics, and there are others produced commercially, such as Dart for the BBC. All basically perform the same functions with variations in the language used. Generally, Commodore-64 Logo is like MIT Logo, Atari is like Apple, and the BBC versions are (currently) of the turtle graphics type. If you are buying a book or resource for your Logo version, ensure it is compatible, or machine independent.

TITLE: **Learning Logo on the Apple II**

AUTHORS: McDougall, Adams, Adams

PUBLISHER: Prentice-Hall Australia, 1983

LOGO VERSION: MIT and Apple

YEAR LEVEL: Years 8 to adult

COST: Approx. $15.00 (250 pages)

AVAILABLE: Order through most bookshops

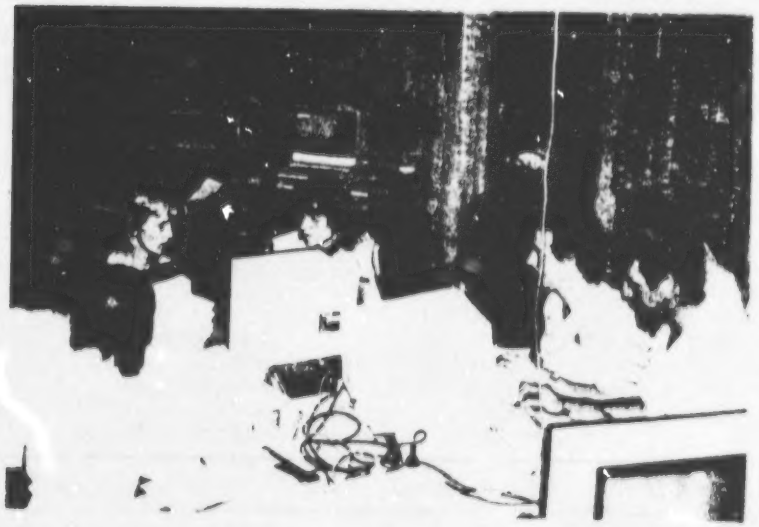
REVIEWER: John Roche, APCC

RECOMMENDATION: Suitable for a reference book or teacher manual

REVIEW

This is more of a reference book than a teaching guide though the Preface indicates otherwise. It moves very quickly into defining procedures, recursion, named variables and list processing, thus covering most areas to challenge senior students and perhaps even teachers. There are eight useful appendices, including one which identifies and locates all procedures used in the book, providing an excellent source of your own Logo utilities.

John Roche



BOOK REVIEW

Title: **Structured Programming with BBC BASIC**

Author: Roy Atherton

Publisher: Ellis Horwood Publishers

Distributors: Hienemann Publishers Aust.

Reviewed by: Phil Sloper

This small book provides the novice user with an easy to read introduction to computer progamming.

The Author has been careful to illustrate the concept of structure and modularity from the start of the book. His care in approach should assist teachers in guiding students through this aspect of the software generation process.

This book utilises Structure Charts to describe problems and although some unusual symbolism is used in these, the result is clear, easy to follow designs. These complement the accompanying text and are usually on the same page to minimise problems with flipping pages.

The early section of the book introduces the basics of computer programming and includes an elegant coverage of data structures.

From this base, the book moves towards a discussion of procedures, functions and parameters often using the BBC's advanced graphics facilities as a vehicle for illustrating the ideas.

The author has drawn attention to the limitations of the BBC BASIC. When the need arises he discusses the use of constructs such as the 'WHILE condition do' construct and shows how a compound statement may be used to imitate the missing construct's behaviour.

In summary, I would suggest that this book would make an excellent student text in programming sections of courses, such as the Year 11 Computer Studies Course.

Phil Sloper

Name: **Facit 4510**
Type : Dot Matrix Printer
Cost: Under $1000
Available from: Cadzow Pty Ltd
Reviewed by: Dean Rosenhain

The Facit 4510 printer is a fine example of current dot matrix printer technology available to schools at reasonable cost.

It shares its overall looks with almost all other small printers: "If you've seen one, you've seen them all". The colour of the case is a shade darker than the Commodore 64. It has a series of 'front panel' switches to control type style, form feed and so on.

The 4510's specifications are impressive. It can print up to 120 characters per second. This usually refers to an instantaneous speed which can sometimes have little relation to the amount of printing the machine can do in any given time. One factor that can have a major effect on throughput is the time it takes for the print head to move from the end of the line just printed to the starting place for the next line of characters. One technique most dot matrix printers use to improve this aspect of performance is bi-directional printing. This means that the printer prints one line left-to right and the next line is printed right-to-left. This cuts down the un-needed movement of the print head.

The Facit goes a step further by using a special 'minimum time to print' algorithm that looks ahead to make sure that the print head travels only as far as necessary when printing each line. All of this means that the 4510 does perform at a reasonable rate.

Another performance improver is a 2K buffer inside of the printer. This means that the printer can accept up to 2000 characters from the computer and hold them while it is printing. The computer thinks that the characters have been printed, and for small amounts of printing, the effective throughput from the computer's point of view could be around 1000 characters per second! A buffer is very useful in a network environment when you wish to minimise network traffic.

The 4510 includes three interfaces as standard. At APCC, we used the Centronics-standard parallel interface. There is also a 232 serial interface and a current loop interface. This means that the Facit will work with almost any computer.

When printing text, the 4510 can be made to print in a variety of pitches. A small rotary switch on the front panel selects the type style when the printer is switched on. The style can be altered from software. The 4510 can handle underlining, elongation,

proportional spaced and superimposition of characters.

The quality of type is excellent for a dot matrix printer. It would be suitable for students using a word processor.

The printer also allows pins in the print head to be controlled directly, thus allowing graphics screen dumps and the like. Unfortunately we did not have any BBC screen dump programs for the 4510. (No, the 4510 does not use the same escape codes as the Epson series printers.)

Noise levels are sometimes very important when it comes to choosing a printer. There is nothing more annoying than trying to talk over the top of a screaming dot matrix printer. As a general rule, the faster the printer, the noisier it is. Good design of the case and some simple foam sound-proofing can make a big difference. The Facit rates about seven out of ten in this respect. It is certainly not the noisiest printer I have used, but it probably would not do to use one in the middle of a quiet library.

The unit has adjustable tractor and friction feed for a wide range of paper types including letter head and label printing.

A "Vertical Format Unit" is built in if you wish to write programs for fancy output.

Two small complaints concern the status of the machine when first turned on, and the lid covering the print head area. When the machine is turned on, the status is always set to "off-line". This means that you have to click the "on-line" switch on the front panel before it will work. The reference guide mentions a solder bridge on the circuit borad that will change this default. If you purchase a Facit, it may be possible to ask for the alteration before delivery.

The lid covering the printing area is hinged from the back. This means that when the lid is lifted, you can see the print head, the line of characters just printed and so on. When the printer is in operation, the open lid can interfere with the paper feed.

Inserting paper into the machine was relatively simple, but once again, the lid tended to get in the way. I found it more manageable with the lid entirely removed.

In summary, the Facit 4510 is a very robust and hard-working printer with good quality output at a reasonable price. If the print quality, the 2K buffer and high printing speed are your high priorities, I would recommend the 4510. If price is your major concern, there are printers that are selling for around half the price of the Facit. The lack of graphics dump software is something that should be overcome in the near future. Perhaps a job for the BBC User's Group?

72 Dean Rosenhain

XIII BITS and BYTES

This section is a collection of miscellaneous items which may be of use or simply passing interest. The first topic deals with PRODOS which is now available to Apple Users - it is reputed to be up to 3 times faster than the current DOS. We have also arranged a special deal for 2 IBM publications which should be attractive as resource material.

Besides Bits on Robotics, S-Pascal etc. we have also included as one of the Bits a list of the magazines and journals to which we subscribe. This is not intended to reflect in any way a particular bias on our part - it is aimed simply to reduce the number of phone queries! If you consider there to be any other pieces of literature which we should be receiving, then please let us know.

'The Computer in the General Curriculum' is now produced 3 times per year and so, in the intervening months our 'data-line' is kept open via a 'Newsletter'. We have therefore included the 'Contents' page from the first 2 Newsletters and this should provide you with an easy reference and save us reproducing the articles again.

O-O-O

PRODOS is an upgraded operating system for the Apple II. Schools can upgrade their DOS 3.3 disks by returning the originals to Apple and asking for an upgrade to PRODOS. Cost is $55.00. PRODOS is significantly faster and more sophisticated than DOS 3.3. All files and programs are compatible. It requires a 64K machine.

O-O-O

Since February, APCC has had the chance to review two robots designed for educational purposes. As a first comment, I can say that there is no threat to our jobs from these little devices.

The first to be viewed was HERO, a HEATH/ZENITH product. This robot had sight, sonar, hearing, motion and speech capabilities, but the programming was arduous. It appeared that the motion and turning were a little inaccurate and this caused some difficulties when working on tables.

The second was called TOPO and will be made available through FUTURETRONICS later in the year. This one has only speech and motion capabilities, but both are very good. Furthermore, the programming was simple and much like LOGO.

Both were expensive, with prices suggested to be a number of thousands of dollars. We have as yet, no firm plans of progress from here, but we will seek to consider this area as it is already a suggested option for the year 11 course.

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COMPUTER STUDIES RESOURCES

IBM, the suppliers of the Angle Park Computing Centre mainframe computer, produce a large number of publications relating to development in computer science and associated disciplines. Although the majority of such publications are highly technical, some do provide very valuable resource material for teachers of senior school courses.

The Angle Park Computing Center has negotiated with IBM to bulk purchase two publications which offer good resource material at very reasonable cost:

> "Human Aspects of Workstations with Visual Displays" ($5.00) and
>
> 25th Anniversary Edition of the Research & Development Journal covering the history of computing technology ($12.00)

To order these publications, send your order with a cheque for the appropriate amount, plus $2.00 postage if not on the Education Department courier to the Angle Park Computing Centre.

As these publications are to be bulk-ordered from the United States, allow 6-8 weeks for delivery.

The Angle Park Computing Centre will provide ONE bulk order, so schools wishing to purchase these publications should place their orders with the Centre before end of first term.

These publications are of a technical nature and support senior school courses. They are not intended for junior secondary or primary school computing.

S-PASCAL

Yes, it is here and available under special conditions to schools, however, it is not really for student use as it is far too far from standard to be useful. It is, however, useful for introducing staff to this language.

SSC COURSES '85

If you are considering the introduction of a course in 1985 and forgot to get approval prior to the official appearance of SSABSA, you will have to adopt a pre-existing course for '85. This is probably the best way to go anyway, as it reduces the work level required and review and modification for 1986 is possible.

Information about the SSC courses is available from the APCC.

Magazines at APCC

Creative Computing - US
Personal Computing - US
Educational Computing - UK
Australian Personal Computer
Your Computer - Aust.
Australian Micro
Byte - US
Computing Teacher - US
BBC Micro User - UK
BeeBug - UK
Call Apple - US
Micro Computing - US
Interface Age - US
Compute - US
Pacificic Computer Weekly
Computer World

Plus Newsletters from Interstate Education Depts.

Our warmest congratulations go to Beverley, our super-secretary, on her recent marriage. Bev is no longer a Jones (it was becoming increasingly difficult to keep up with her anyway!) but is now Mrs. Dedman. Congratulations also to husband Bruce on his delightful catch.

0-0-0

TOPICS covered in Newsletters 1 & 2 February 1984

ITEM	TOPIC
0	APCC Mainframe Developments
1	Newsletters & Publications
2	APCC Staff List/ Who's Who
3	Services of the APCC
4	Professional Development Programme
5	Curriculum Development Task Forces
6	Curriculum Committees
7	Software Development
8	National Schools Cosputing Programme
9	Equipment Recommendations
10	Regional Advisors & Contact People
11	Electronic Mail Facility
12	Network Managers Meetings
13	MECC Software
14	SSC Computer Studies
15	SACSTA News
16	Grad. Dip. in Computing at SAIT

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March 1984

ITEM	TOPIC
1	Publication Mixup
2	Computing Facility Equity Issues
3	Hardware Recommendations
4	Teaching Computer Studies
5	More Mix-ups
6	Year 11 Course Notes Update
7	Low Level Network Managers
8	Chess Mate!
9	Acornsoft S-Pascal Offer
10	BBC BASIC Upgrade
11	Schools with BBCs
12	Econet Managers Meetings
13	MECC Software
14	APCC Software Browsing Corner
15	Software Reviews
16	Software Un-classified Advert'
17	ABC TV Computer Series
18	SACSTA Information

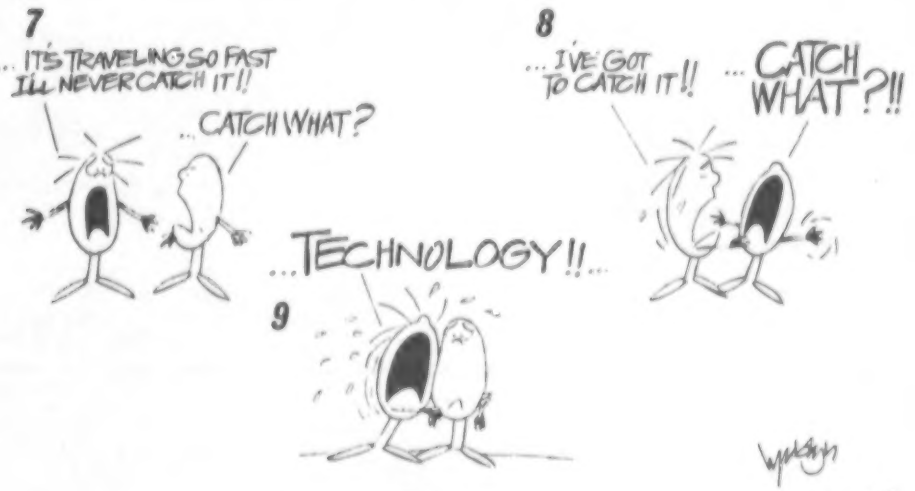
O-O-O

An advertisement appeared recently in Los Angeles:

"Room-mate wanted: I am looking for a room-mate to share a 2 bedroom apartment in San Gabriel, CA ..... You may also have partial use of my IBM PC Computer."

Is this a case of Room and Baud?

O-O-O



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Stop Press!

APCC/SACSTA Vacation Conference
22nd & 23rd May 1984, At Angle Park CC

APCC, in conjunction with SACSTA, are running a two day conference for Computer Studies teachers on the above dates. There are about thirty places still available. The conference fee is $15, payable to Angle Park Computing Centre on or before the conference date.

The conference timetable has not been finalised, but tentatively it looks like this:-

Tuesday 22nd

9-9:30 Registration & welcome

9:30-10:30 Opening speaker- To be announced.

11-11:45 Methodology: Educational use of Data Base programs (hands on practice)

11:45-12:30 What's been happening at... (A school running Computer Studies)

1:30-4pm Bus trip to "secret location" for talk and demonstration of some Hi-Tech stuff. Lunch and bus fare included in conference fee.

Wednesday 23rd May

9:15-10:15 Mr Paul Dyson of Westpac Bank: E.F.T.

10:45-11:30 What's been happening at.. (another school)

11:30-12:30 Methodology: Word Processing in Computer Studies (Hands-On)

1:30-2:30 Another speaker (to be announced)

2:30-3:? Assessment: A forum on assessment in Computer Studies

For further information, ring Dean Rosenhain or Phil Sloper. To book a place (there are only 30 left), ask for Bev. APCC's phone number is 268 5666.

Dean & Phil

p.s. Term II's inservice program includes a three-part course on Pascal programming. If you wish to learn this language, or wish to brush up your skills, ring Bev and put your name down.

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